# AUTHOR INDEX


## A

**Aaronson, S. A.** *see* Barbacid, Robbins, Aaronson

**Ahmed, A.** *see* Subbarao, Mosier, Ahmed, Mond, Scher, Paul

**Aikawa, M.** *see* Miller, Aikawa, Johnson, Shiroishi

**Andersson, J., Coutinho, A., Melchers, F.,** Mitogen-activated B-cell blasts reactive to more than one mitogen, **553**

**Andrew, M. E.** *see* Blanden, Andrew

**Aoki, H.** *see* Hamaoka, Fujiwara, Teshima, Aoki, Yamamoto, Kitagawa

**Arend, W. P.** *see* Ragsdale, Arend

**Arnheiter, H.** *see* Haller, Arnheiter, Gresser, Lindenmann

**Asofsky, R.** *see* Pasanen, Asofsky, Baker

**Avery, O. T., MacLeod, C. M., McCarty, M.,** Studies on the chemical nature of the substance inducing transformation of pneumococcal types. Induction of transformation by a desoxyribonucleic acid fraction isolated from pneumococcus type III [Landmark 1944 article], **297**

## B

**Baba, M.** *see* Mitsuoka, Morikawa, Baba, Harada

**Bach, B. A., Greene, M. I., Benacerraf, B., Nisonoff, A.,** Mechanisms of regulation of cell-mediated immunity. IV. Azobenzenearsonate-specific suppressor factor(s) bear cross-reactive idiotypic determinants the expression of which is linked to the heavy-chain allotype linkage group of genes, **1084**

—. *see* Greene, Bach, Benacerraf

**Bach, F. H.** *see* Gose, Bach

**Baker, C. J.** *see* Kasper, Baker, Baltimore, Crabb, Schiffman, Jennings

**Baker, P. E., Gillis, S., Smith, K. A.,** Monoclonal cytolytic T-cell lines, **273**

—. *see* Gillis, Union, Baker, Smith

**Baker, P. J.** *see* Pasanen, Asofsky, Baker

**Baldwin, W. M., III** *see* Hendry, Tilney, Baldwin, Graves, Milford, Strom, Carpenter

**Baltimore, R. S.** *see* Kasper, Baker, Baltimore, Crabb, Schiffman, Jennings

**Barbacid, M., Robbins, K. C., Aaronson, S. A.,** Wild mouse RNA tumor viruses. A nongenetically transmitted virus group closely related to exogenous leukemia viruses of laboratory mouse strains, **254**

**Bard, J. B. L.** *see* McBride, Bard

**Beelen, R. H. J.** *see* vander Meer, Beelen, Fluitsma, van Furth

**Bellgrau, D., Wilson, D. B.,** Immunological studies of T-cell receptors. II. Limited polymorphism of idiotypic determinants on T-cell receptors specific for major histocompatibility complex alloantigens, **234**

**Benacerraf, B.** *see* Bach, Greene, Benacerraf, Nisonoff

—. *see* Germain, Ju, Kipps, Benacerraf, Dorf

—. *see* Greene, Bach, Benacerraf

**Benacerraf, B. (cont'd)**

—. *see* Weinberger, Greene, Benacerraf, Dorf

**Benchetrit, L. C., Wannamaker, L. W., Gray, E. D.,** Immunological properties of hyaluronidases associated with temperate bacteriophages of group A streptococci, **73**

**Bennink, J. R.** *see* Doherty, Bennink

**Bernstein, A.** *see* McCool, Mak, Bernstein

**Bianco, C.** *see* Götze, Bianco, Cohn

—. *see* Shear, Nussenzweig, Bianco

**Biddison, W. E.** *see* Shaw, Biddison

**Biesecker, G., Podack, E. R., Halverson, C. A., Müller-Eberhard, H. J.,** C5b-9 dimer: Isolation from complement lysed cells and ultrastructural identification with complement-dependent membrane lesions, **448**

**Bilofsky, H.** *see* Kabat, Wu, Bilofsky

**Binz, H., Frischknecht, H., Shen, F. W., Wigzell, H.,** Idiotypic determinants on T-cell subpopulations, **910**

**Blanden, R. V., Andrew, M. E.,** Primary anti-viral cytotoxic T-cell responses in semiallogeneic chimeras are not absolutely restricted to host H-2 type, **535**

—. *see* Mullbacher, Blanden

—. *see* O'Neill, Blanden

**Blomberg, B.** *see* De Preval, Blomberg, Cohn

**Bloom, B. R.** *see* Minato, Bloom, Jones, Holland, Reid

**Bogowitz, C. A.** *see* Katz, Katz, Bogowitz, Skidmore

**Bona, C., Hooghe, R., Cazenave, P. A., Leguern, C., Paul, W. E.,** Cellular basis of regulation of expression of idiotype. II. Immunity to anti-MOPC-460 idiotype antibodies increases the level of anti-trinitrophenyl antibodies bearing 460 idiotypes, **815**

—. **Paul, W. E.,** Cellular basis of regulation of expression of idiotype. I. T-Suppressor cells specific for MOPC 460 idiotype regulate the expression of cells secreting anti-TNP antibodies bearing 460 idiotype, **592**

**Bourdon, M.** *see* Theofilopoulos, Eisenberg, Bourdon, Crowell, Dixon

**Boyse, E. A.** *see* Reske-Kunz, Scheid, Boyse

**Braciale, T. J.,** Specificity of cytotoxicity T cells directed to influenza virus hemagglutinin, **856**

**Bradley, B. A.** *see* Goulmy, Hamilton, Bradley

**Braun, D. G.** *see* Schalch, Wright, Rodkey, Braun

**Brukner, L. H.** *see* Nathan, Brukner, Silverstein, Cohn

—. *see* Nathan, Silverstein, Brukner, Cohn

**Buck, L. B., Yuan, D., Vitetta, E. S.,** A dichotomy between the expression of IgD on B cells and its requirement for triggering such cells with two T-independent antigens, **987**

**Butcher, G. W.** *see* Gallico, Butcher, Howard

## C

**Cantor, H.** *see* Kasai, Leclerc, McVay-Boudreau, Shen, Cantor

**Capra, J. D.** *see* Cook, Vitetta, Uhr, Capra

**Carlsson, P.** *see* Kimura, Wigzell, Holmquist, Ersson, Carlsson

**Carpenter, C. B.** *see* Hendry, Tilney, Baldwin, Graves, Milford, Strom, Carpenter
**Carretero, O. A.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,
**Cazenave, P. A.** *see* Bona, Hooghe, Cazenave, Leguérn, Paul
**Cebra, J. J.** *see* Gearhart, Cebra
**Chapdelaine, J. M., Plata, F., Lilly, F.,** Tumors induced by murine sarcoma virus contain precursor cells capable of generating tumor-specific cytolytic T lymphocytes, **1531**
**Chatterjee-Hasrouni, S., Lala, P. K.,** Localization of H-2 antigens on mouse trophoblast cells, **1238**
**Childs, R. A.** *see* Feizi, Childs, Watanabe, Hakomori
**Chiller, J. M.** *see* Corradin, Chiller
**Chiorazzi, N., Fu, S. M., Kunkel, H. G.,** Induction of polyclonal antibody synthesis by human allogeneic and autologous helper factors, **1543**
—. *see* King, Kochoumian, Chiorazzi
**Chused, T. M.** *see* Morse, Chused, Hartley, Mathieson, Sharrow, Taylor
**Claman, H. N.** *see* Miller, Wetzig, Claman
—. *see* Sy, Miller, Moorhead, Claman
**Cloyd, M. W., Hartley, J. W., Rowe, W. P.,** Cell-surface antigens associated with recombinant mink cell focus-inducing murine leukemia viruses, **702**
**Cohen, M. P., Klein, C. V.,** Glomerulopathy in rats with streptozotocin diabetes. Accumulation of glomerular basement membrane analogous to human diabetic nephropathy, **623**
**Cohn, M.** *see* De Preval, Blomberg, Cohn
**Cohn, Z.** *see* Nathan, Nogueira, Juangbhanich, Ellis, Cohn
**Cohn, Z. A.** *see* Götze, Bianco, Cohn
—. *see* Nathan, Brukner, Silverstein, Cohn
—. *see* Nathan, Silverstein, Brukner, Cohn
—. *see* Steinman, Kaplan, Witmer, Cohn
**Collins, S. J., Ruscetti, F. W., Gallagher, R. E., Gallo, R. C.,** Normal functional characteristics of cultured human promyelocytic leukemia cells (HL-60) after induction of differentiation by dimethylsulfoxide, **969**
**Cook, R. G., Vitetta, E. S., Uhr, J. W., Capra, J. D.,** Structural studies on the murine Ia alloantigens. V. Evidence that the structural gene for the I-E/C beta polypeptide is encoded within the *I-A* subregion, **981**
**Corradin, G., Chiller, J. M.,** Lymphocyte specificity to protein antigens. II. Fine specificity of T-cell activation with cytochrome *c* and derived peptides as antigenic probes, **436**
**Coutinho, A.** *see* Andersson, Coutinho, Melchers
**Crabb, J. H.** *see* Kasper, Baker, Baltimore, Crabb, Schiffman, Jennings
**Crowell, J. S., Jr.** *see* Theofilopoulos, Eisenberg, Bourdon, Crowell, Dixon

## D

**Dalchau, R., Fabre, J. W.,** Identification and unusual tissue distribution of the canine and human homologues of Thy-1, **576**
**David, C. S.** *see* Rich, David, Rich
**Davie, J. M.** *see* Perlmutter, Nahm, Stein, Slack, Zitron, Paul, Davie
**De Preval, C., Blomberg, B., Cohn, M.,** Determination of the kappa anti- $\alpha$ (1,3) dextran immune response difference by a gene(s) in the $v_k$-locus of mice, **1265**
**Deimann, W., Fahimi, H. D.,** The appearance of transition forms between monocytes and Kupffer cells in the liver of rats treated with glucan. A cytochemical and ultrastructural study, **883**
**DeLeo, A. B.** *see* Stockert, DeLeo, O'Donnell, Obata, Old
**Delovitch, T. L.** *see* Prud'homme, Sohn, Delovitch
**Dennert, G.** *see* Waterfield, Dennert, Swain, Dutton
**Diener, E.** *see* Waters, Pilarski, Wegmann, Diener
**Dinowitz, M.** *see* Kende, Hill, Dinowitz, Stephenson, Kelloff
**Dixon, F. J.** *see* Izui, McConahey, Theofilopoulos, Dixon
—. *see* Theofilopoulos, Eisenberg, Bourdon, Crowell, Dixon
**Doherty, P. C., Bennink, J. R.,** Vaccinia-specific cytotoxic T-cell responses in the context of H-2 antigens not encountered in thymus may reflect aberrant recognition of a virus-H-2 complex, **150**
**Dorf, M. E.** *see* Germain, Ju, Kipps, Benacerraf, Dorf
—. *see* Weinberger, Greene, Benacerraf, Dorf
**Dutton, R. W.** *see* Waterfield, Dennert, Swain, Dutton

## E

**Eckner, R. J., Hettrick, K. L.,** Persistence and pathogenicity of defective Friend spleen focus-forming virus. Decreased transplantability of hemopoietic cells as a marker for preleukemic change, **340**
**Eddy, E. M.** *see* Klebanoff, Foerder, Eddy, Shapiro
**Egan, W.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,
**Eisenberg, R. A.** *see* Theofilopoulos, Eisenberg, Bourdon, Crowell, Dixon
**Ellis, J.** *see* Nathan, Nogueira, Juangbhanich, Ellis, Cohn
**Elson, C. O., Heck, J. A., Strober, W.,** T-Cell regulation of murine IgA synthesis, **632**
**Erb, P., Meier, B., Matsunaga, T., Feldmann, M.,** Nature of T-cell macrophage interaction in helper-cell induction in vitro. II. Two stages of T-helper-cell differentiation analyzed in irradiation and allophenic chimeras, **686**
**Ersson, B.** *see* Kimura, Wigzell, Holmquist, Ersson, Carlsson

## F

**Fabre, J. W.** *see* Dalchau, Fabre
**Fahimi, H. D.** *see* Deimann, Fahimi
**Falkenhein, S. F.** *see* Parker, Kelly, Falkenhein, Huber
**Farrar, J. J.** *see* McGhee, Farrar, Michalek, Mergenhagen, Rosenstreich
**Faulk, W. P.** *see* McIntyre, Faulk
**Feighery, C., Stastny, P.,** HLA-D region-associated determinants serve as targets for human cell-mediated lysis, **485**

**Feizi, T., Childs, R. A., Watanabe, K., Hakomori, S. I.,** Three types of blood group I specificity among monoclonal anti-I autoantibodies revealed by analogues of a branched erythrocyte glycolipid, **975**

**Feldman, J. D.** *see* Woda, Feldman

**Feldmann, M.** *see* Erb, Meier, Matsunaga, Feldmann

**Ferrone, S.** *see* Wilson, Indiveri, Pellegrino, Ferrone

**Fischetti, V. A.** *see* Villarreal, Fischetti, van de Rijn, Zabriskie

**Fluitsma, D. M.** *see* vander Meer, Beelen, Fluitsma, van Furth

**Foerder, C. A.** *see* Klebanoff, Foerder, Eddy, Shapiro

**Frischknecht, H.** *see* Binz, Frischknecht, Shen, Wigzell

**Fu, S. M.** *see* Chiorazzi, Fu, Kunkel

—. *see* Wang, Fu, Kunkel

**Fujiwara, H.** *see* Hamaoka, Fujiwara, Teshima, Aoki, Yamamoto, Kitagawa

G

**Gallagher, R. E.** *see* Collins, Ruscetti, Gallagher, Gallo

**Gallico, G. G., Butcher, G. W., Howard, J. C.,** The role of subregions of the rat major histocompatibility complex in the rejection and passive enhancement of renal allografts, **244**

**Gallo, R. C.** *see* Collins, Ruscetti, Gallagher, Gallo

**Gearhart, P. J., Cebra, J. J.,** Differentiated B lymphocytes. Potential to express particular antibody variable and constant regions depends on site of lymphoid tissue and antigen load, **216**

**Germain, R. N., Ju, S.-T., Kipps, T. J., Benacerraf, B., Dorf, M. E.,** Shared idiotypic determinants on antibodies and T-cell-derived suppressor factor specific for the random terpolymer L-glutamic acid$^{60}$-L-alanine$^{30}$-L-tyrosine$^{10}$, **613**

**Gibson, D. M., MacLean, S. J.,** Ef2: A new *Ly* 3-linked light-chain marker expressed in normal mouse serum immunoglobulin, **1477**

**Gilheany, P. E.** *see* Shearer, Schmitt-Verhulst, Pettinelli, Miller, Gilheany

**Gillis, S., Union, N. A., Baker, P. E., Smith, K. A.,** The in vitro generation and sustained culture of nude mouse cytolytic T-lymphocytes, **1460**

—. *see* Baker, Gillis, Smith

**Glaser, M.,** Regulation of specific cell-mediated cytotoxic response against SV40-induced tumor associated antigens by depletion of suppressor T cells with cyclophosphamide in mice, **774**

**Godfrey, S.** *see* Hauptman, Kansu, Serno, Godfrey

**Goldstein, L. T.** *see* Weinhold, Goldstein, Wheelock

**Goodman, G. W., Sultzer, B. M.,** Endotoxin protein is a mitogen and polyclonal activator of human B lymphocytes, **713**

**Goodman, J. W.** *see* Primi, Lewis, Triglia, Goodman

**Goodman, M. G., Weigle, W. O.,** Nonspecific activation of murine lymphocytes. VI. Mediation of synergistic interaction between T and B lymphocytes by a cell-associated, reciprocally acting lymphocyte proliferation helper, **644**

**Gose, J. E., Bach, F. H.,** H-2 I-Region encoded targets in allograft rejection, **1254**

**Gotschlich, E. C.** *see* Tai, Gotschlich, Lancefield

**Götze, O., Bianco, C., Cohn, Z. A.,** The induction of macrophage spreading by factor B of the properdin system, **372**

**Goulmy, E., Hamilton, J. D., Bradley, B. A.,** Anti-self HLA may be clonally expressed, **545**

**Granelli-Piperno, A., Vassalli, J.-D., Reich, E.,** RNA and protein synthesis in human peripheral blood polymorphonuclear leukocytes, **284**

**Graves, M. J.** *see* Hendry, Tilney, Baldwin, Graves, Milford, Strom, Carpenter

**Gray, E. D.,** Purification and properties of an extracellular blastogen produced by group A streptococci, **1438**

—. *see* Benchetrit, Wannamaker, Gray

**Greene, M. I., Bach, B. A., Benacerraf, B.,** Mechanisms of regulation of cell-mediated immunity. III. The characterization of azobenzenearsonate-specific suppressor *T*-cell-derived suppressor factors, **1069**

—. *see* Bach, Greene, Benacerraf, Nisonoff

—. *see* Weinberger, Greene, Benacerraf, Dorf

**Gresser, I.** *see* Haller, Arnheiter, Gresser, Lindenmann

**Guimaraes, J. A.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,

H

**Hakomori, S. I.** *see* Feizi, Childs, Watanabe, Hakomori

**Haller, O., Arnheiter, H., Gresser, I., Lindenmann, J.,** Genetically determined, interferon-dependent resistance to influenza virus in mice, **601**

**Halverson, C. A.** *see* Biesecker, Podack, Halverson, Müller-Eberhard

**Hamaoka, T., Fujiwara, H., Teshima, K., Aoki, H., Yamamoto, H., Kitagawa, M.,** Regulatory functions of hapten-reactive helper and suppressor T lymphocytes. III. Amplification of a generation of tumor-specific killer T-lymphocyte activities by suppressor T-cell-depleted hapten-reactive T lymphocytes, **185**

**Hamilton, J. D.** *see* Goulmy, Hamilton, Bradley

**Han, Y. N.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,

**Harada, T.** *see* Mitsuoka, Morikawa, Baba, Harada

**Hartley, J. W.** *see* Cloyd, Hartley, Rowe

—. *see* Morse, Chused, Hartley, Mathieson, Sharrow, Taylor

**Hathcock, K. S.** *see* Singer, Hathcock, Hodes

**Hauptman, S. P., Kansu, E., Serno, M., Godfrey, S.,** Human macromolecular insoluble cold globulin (MICG). I. T-cell origin of T-MICG and null cell origin of N-MICG, **158**

**Hausman, P. B., Stobo, J. D.,** Specificity and function of a human autologous reactive T cell, **1537**

**Heck, J. A.** *see* Elson, Heck, Strober

**Hendry, W. S., Tilney, N. L., Baldwin, W. M., III, Graves, M. J., Milford, E., Strom, T. B., Carpenter, C. B.,** Transfer of specific unresponsiveness to organ allografts by thymocytes. Specific unresponsiveness by thymocyte transfer, **1042**

**Hettrick, K. L.** *see* Eckner, Hettrick

**Hill, R.** *see* Kende, Hill, Dinowitz, Stephenson, Kelloff

**Ho, M.-K., Kong, A. S., Morse, S. I.,** The in vitro effects of *Bordetella pertussis* lymphocytosis-promoting factor on murine lymphocytes. III. B-Cell dependence for T-cell proliferation, **1001**
**Hodes, R. J.** *see* Singer, Hathcock, Hodes
**Hoff, G. E.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,
**Holland, J.** *see* Minato, Bloom, Jones, Holland, Reid
**Holmquist, G.** *see* Kimura, Wigzell, Holmquist, Ersson, Carlsson
**Hong, R., Schulte-Wissermann, H., Jarrett-Toth, E., Horowitz, S. D., Manning, D. D.,** Transplantation of cultured thymic fragments. II. Results in nude mice, **398**
**Hooghe, R.** *see* Bona, Hooghe, Cazenave, Leguérn, Paul
**Horowitz, S. D.** *see* Hong, Schulte-Wissermann, Jarrett-Toth, Horowitz, Manning
**Howard, J. C.** *see* Gallico, Butcher, Howard
**Huang, T. W.,** Basal lamina heterogeneity in the glomerular capillary tufts of human kidneys, **1450**
**Huber, M. G.** *see* Parker, Kelly, Falkenhein, Huber
**Hurme, M.,** Differential cyclophosphamide sensitivity of precursor cells in allogeneic and H-2 restricted cytotoxic responses, **290**

## I

**Indiveri, F.** *see* Wilson, Indiveri, Pellegrino, Ferrone
**Iwanaga, S.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,
**Izui, S., McConahey, P. J., Theofilopoulos, A. N., Dixon, F. J.,** Association of circulating retroviral p70-anti-gp70 immune complexes with murine systemic lupus erythematosus, **1099**

## J

**Jarrett-Toth, E.** *see* Hong, Schulte-Wissermann, Jarrett-Toth, Horowitz, Manning
**Jennings, H. J.** *see* Kasper, Baker, Baltimore, Crabb, Schiffman, Jennings
**Johnson, J. G.** *see* Miller, Aikawa, Johnson, Shiroishi
**Jones, C.** *see* Minato, Bloom, Jones, Holland, Reid
**Ju, S.-T.** *see* Germain, Ju, Kipps, Benacerraf, Dorf
**Juangbhanich, C.** *see* Nathan, Nogueira, Juangbhanich, Ellis, Cohn

## K

**Kabat, E. A., Wu, T. T., Bilofsky, H.,** Evidence supporting somatic assembly of the DNA segments (minigenes), coding for the framework, and complementarity-determining segments of immunoglobulin variable regions, **1299**
**Kahaleh, M. B., Sherer, G. K., LeRoy, E. C.,** Endothelial injury in scleroderma, **1326**
**Kansu, E.** *see* Hauptman, Kansu, Serno, Godfrey
**Kaplan, G.** *see* Steinman, Kaplan, Witmer, Cohn
**Kaplan, R. B., Quintans, J.,** Phosphorylcholine-specific helper T cells in mice with an X-linked defect of antibody production to the same hapten, **267**
**Kappas, A.** *see* Urabe, Sassa, Kappas
**Kappler, J. W.** *see* Marrack, Kappler
**Kasai, M., Leclerc, J. C., McVay-Boudreau, L., Shen, F. W., Cantor, H.,** Direct evidence that natural killer cells in nonimmune spleen cell populations prevent tumor growth in vivo, **1260**
**Kasper, D. L., Baker, C. J., Baltimore, R. S., Crabb, J. H., Schiffman, G., Jennings, H. J.,** Immunodeterminant specificity of human immunity to type III group B *Streptococcus*, **327**
**Kato, H.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,
**Katz, D. H.,** Regulation of IgE antibody production by serum molecules. III. Induction of suppressive activity by allogeneic lymphoid cell interactions and suppression of IgE synthesis by the allogeneic effect, **539**
—. **Katz, L. R., Bogowitz, C. A., Skidmore, B. J.,** Adaptive differentiation of murine lymphocytes. II. The thymic microenvironment does not restrict the cooperative partner cell preference of helper T cells differentiating in $F_1 \rightarrow F_1$ thymic chimeras, **1360**
**Katz, L. R.** *see* Katz, Katz, Bogowitz, Skidmore
**Kelloff, G. J.** *see* Kende, Hill, Dinowitz, Stephenson, Kelloff
**Kelly, J. P.** *see* Parker, Kelly, Falkenhein, Huber
**Kende, M., Hill, R., Dinowitz, M., Stephenson, J. R., Kelloff, G. J.,** Naturally occurring lymphocyte-mediated immunity to endogenous type-C virus in the mouse. Blocking of the lymphocyte reactivity with antisera to the virus, **358**
**Kim, B. S.,** Mechanisms of idiotype suppression. I. In vitro generation of idiotype-specific suppressor T cells by anti-idiotype antibodies and specific antigen, **1371**
**Kimura, A., Wigzell, H., Holmquist, G., Ersson, B., Carlsson, P.,** Selective affinity fractionation of murine cytotoxic T lymphocytes (CTL). Unique lectin specific binding of the CTL associated surface glycoprotein, T 145, **473**
**King, T. P., Kochoumian, L., Chiorazzi, N.,** Immunological properties of conjugates of ragweed pollen antigen E with methoxypolyethylene glycol or a copolymer of D-glutamic acid and D-lysine, **424**
**Kipps, T. J.** *see* Germain, Ju, Kipps, Benacerraf, Dorf
**Kitagawa, M.** *see* Hamaoka, Fujiwara, Teshima, Aoki, Yamamoto, Kitagawa
**Klebanoff, S. J., Foerder, C. A., Eddy, E. M., Shapiro, B. M.,** Metabolic similarities between fertilization and phagocytosis. Conservation of a peroxidatic mechanism, **938**
—. *see* Rosen, Klebanoff
**Klein, C. V.** *see* Cohen, Klein
**Kochoumian, L.** *see* King, Kochoumian, Chiorazzi
**Kong, A. S., Morse, S. I.,** The in vitro effects of *Bordetella pertussis* lymphocytosis-promoting factor on murine lymphocytes. IV. Generation, characterization, and specificity of cytotoxic lymphocytes, **1393**
—. *see* Ho, Kong, Morse
**Kram, D.** *see* Tice, Schneider, Kram, Thorne
**Kunkel, H. G.** *see* Chiorazzi, Fu, Kunkel

**Kunkel, H. G. (cont'd)**
—. *see* Wang, Fu, Kunkel

L

**Lala, P. K.** *see* Chatterjee-Hasrouni, Lala
**Lancefield, R. C.** *see* Tai, Gotschlich, Lancefield
**Leclerc, J. C.** *see* Kasai, Leclerc, McVay-Boudreau, Shen, Cantor
**Lederberg, J.,** Introduction to Avery et al. 1944 Landmark article, **297**
**Leguern, C.** *see* Bona, Hooghe, Cazenave, Leguern, Paul
**LeRoy, E. C.** *see* Kahaleh, Sherer, LeRoy
**Levy, R. B., Shearer, G. M.,** Regulation of T-cell-mediated lympholysis by the murine major histocompatibility complex. I. Preferential in vitro responses to trinitrophenyl-modified self K- and D-coded gene products in parental and $F_1$ hybrid mouse strains, **1379**
**Lewis, G. K.** *see* Primi, Lewis, Triglia, Goodman
**Lilly, F.** *see* Chapdelaine, Plata, Lilly
**Lin, W.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,
**Lindenmann, J.** *see* Haller, Arnheiter, Gresser, Lindenmann

M

**MacLean, S. J.** *see* Gibson, MacLean
**MacLeod, C. M.** *see* Avery, MacLeod, McCarty
**Mak, T. W.** *see* McCool, Mak, Bernstein
**Maloney, M. A.** *see* Zalman, Maloney, Patt
**Mannik, M.** *see* Striker, Mannik, Tung
**Manning, D. D.** *see* Hong, Schulte-Wissermann, Jarrett-Toth, Horowitz, Manning
**Marrack, P., Kappler, J. W.,** The role of *H-2*-linked genes in helper T-cell function. VI. Expression of *Ir* genes by helper T Cells, **780**
**Masson, P. L.** *see* van Snick, Masson
**Mathieson, B. J.** *see* Morse, Chused, Hartley, Mathieson, Sharrow, Taylor
**Matsunaga, T.** *see* Erb, Meier, Matsunaga, Feldmann
**McBride, W. H., Bard, J. B. L.,** Hyaluronidase-sensitive halos around adherent cells. Their role in blocking lymphocyte-mediated cytolysis, **507**
**McCarty, M.** *see* Avery, MacLeod, McCarty
**McConahey, P. J.** *see* Izui, McConahey, Theofilopoulos, Dixon
**McCool, D., Mak, T. W., Bernstein, A.,** Cellular regulation in Friend virus induced erythroleukemia. Studies with anemic mice of genotype Sl/Sld, **837**
**McGhee, J. R., Farrar, J. J., Michalek, S. M., Mergenhagen, S. E., Rosenstreich, D. L.,** Cellular requirements for lipopolysaccharide adjuvanticity. A role for both T lymphocytes and macrophages for in vitro responses to particulate antigens, **793**
**McIntyre, J. A., Faulk, W. P.,** Antigens of human trophoblast. Effects of heterologous anti-trophoblast sera on lymphocyte responses in vitro, **824**
**McVay-Boudreau, L.** *see* Kasai, Leclerc, McVay-Boudreau, Shen, Cantor
**Meier, B.** *see* Erb, Meier, Matsunaga, Feldmann
**Melchers, F.** *see* Andersson, Coutinho, Melchers
**Mergenhagen, S. E.** *see* McGhee, Farrar, Michalek, Mergenhagen, Rosenstreich
**Meruelo, D.,** A role for elevated H-2 antigen expression in resistance to neoplasia caused by radiation-induced leukemia virus. Enhancement of effective tumor surveillance by killer lymphocytes, **898**
**Michalek, S. M.** *see* McGhee, Farrar, Michalek, Mergenhagen, Rosenstreich
**Milford, E.** *see* Hendry, Tilney, Baldwin, Graves, Milford, Strom, Carpenter
**Miller, D. A.** *see* Weinhold, Miller, Wheelock
**Miller, L. H., Aikawa, M., Johnson, J. G., Shiroishi, T.,** Interaction between cytochalasin B-treated malarial parasites and erythrocytes. Attachment and junction formation, **172**
**Miller, M. W.** *see* Shearer, Schmitt-Verhulst, Pettinelli, Miller, Gilheany
**Miller, S. D., Wetzig, R. P., Claman, H. N.,** The induction of cell-mediated immunity and tolerance with protein antigens coupled to syngeneic lymphoid cells, **758**
—. *see* Sy, Miller, Moorhead, Claman
**Minato, N., Bloom, B. R., Jones, C., Holland, J., Reid, L. M.,** Mechanism of rejection of virus persistently infected tumor cells by athymic nude mice, **1117**
**Mitsuoka, A., Morikawa, S., Baba, M., Harada, T.,** Cyclophosphamide eliminates suppressor T cells in age-associated central regulation of delayed hypersensitivity in mice, **1018**
**Mond, J. J.** *see* Subbarao, Mosier, Ahmed, Mond, Scher, Paul
**Moorhead, J. W.** *see* Sy, Miller, Moorhead, Claman
**Morikawa, S.** *see* Mitsuoka, Morikawa, Baba, Harada
**Morrison, D. C.** *see* Schreiber, Morrison, Podack, Müller-Eberhard
**Morse, H. C., III, Chused, T. M., Hartley, J. W., Mathieson, B. J., Sharrow, S. O., Taylor, B. A.,** Expression of xenotropic murine leukemia viruses as cell-surface gp70 in genetic crosses between strains DBA/2 and C57BL/6, **1183**
**Morse, S. I.** *see* Ho, Kong, Morse
—. *see* Kong, Morse
**Mosier, D. E.** *see* Subbarao, Mosier, Ahmed, Mond, Scher, Paul
**Mullbacher, A., Blanden, R. V.,** H-2-linked control of cytotoxic T-cell responsiveness to alphavirus infection. Presence of H-2D $_K$ during differentiation and stimulation converts stem cells of low responder genotype to T cells of responder phenotype, **786**
**Müller-Eberhard, H. J.** *see* Biesecker, Podack, Halverson, Müller-Eberhard
—. *see* Schreiber, Morrison, Podack, Muller-Eberhard
**Mundy, G. R.** *see* Yoneda, Mundy

N

**Nachman, R. L.** *see* Rabellino, Nachman, Williams, Winchester, Ross
**Nahm, M.** *see* Perlmutter, Nahm, Stein, Slack, Zitron, Paul, Davie

**Nathan, C., Nogueira, N., Juangbhanich, C., Ellis, J., Cohn, Z.,** Activation of macrophages in vivo and in vitro. Correlation between hydrogen peroxide release and killing of *Trypanosoma cruzi*, **1056**

**Nathan, C. F., Brukner, L. H., Silverstein, S. C., Cohn, Z. A.,** Extracellular cytolysis by activated macrophages and granulocytes. I. Pharmacologic triggering of effector cells and the release of hydrogen peroxide, **84**

—. **Silverstein, S. C., Brukner, L. H., Cohn, Z. A.,** Extracellular cytolysis by activated macrophages and granulocytes. II. Hydrogen peroxide as a mediator of cytotoxicity, **100**

**Nisonoff, A.** *see* Bach, Greene, Benacerraf, Nisonoff

**Nogueira, N.** *see* Nathan, Nogueira, Juangbhanich, Ellis, Cohn

**Nussenzweig, R. S.** *see* Shear, Nussenzweig, Bianco

O

**Obata, Y.** *see* Stockert, DeLeo, O'Donnell, Obata, Old

**O'Donnell, P. V.** *see* Stockert, DeLeo, O'Donnell, Obata, Old

**Old, L. J.** *see* Stockert, DeLeo, O'Donnell, Obata, Old

**O'Neill, H. C., Blanden, R. V.,** Quantitative differences in the expression of parentally-derived H-2 antigens in $F_1$ hybrid mice affect T-cell responses, **724**

**Ørskov, F., Ørskov, I., Sutton, A., Schneerson, R., Lin, W., Egan, W., Hoff, G. E., Robbins, J. B.,** Form variation in *Escherichia coli* K1: determined by O-acetylation of the capsular polysaccharide, **669**

**Orskov, I.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,

P

**Parker, C. W., Kelly, J. P., Falkenhein, S. F., Huber, M. G.,** Release of arachidonic acid from human lymphocytes in response to mitogenic lectins, **1487**

**Parks, D. E., Shaller, D. A., Weigle, W. O.,** Induction and mode of action of suppressor cells generated against human gamma globulin. II. Effects of colchicine, **1168**

**Pasanen, V. J., Asofsky, R., Baker, P. J.,** Synthesis of two classes of antibody, $\gamma$M and $\gamma$G or $\gamma$M and $\gamma$A, by identical cells. Amplification of the antibody response to pneumococcal polysaccharide type III, **1227**

**Patt, H. M.** *see* Zalman, Maloney, Patt

**Paul, W. E.** *see* Bona, Hooghe, Cazenave, Leguérn, Paul

—. *see* Bona, Paul

—. *see* Perlmutter, Nahm, Stein, Slack, Zitron, Paul, Davie

—. *see* Schwartz, Yano, Stimpfling, Paul

—. *see* Subbarao, Mosier, Ahmed, Mond, Scher, Paul

**Pellegrino, M. A.** *see* Wilson, Indiveri, Pellegrino, Ferrone

**Perlmutter, R. M., Nahm, M., Stein, K. E., Slack, J., Zitron, I., Paul, W. E., Davie, J. M.,** Immunoglobulin subclass-specific immunodeficiency in mice with an X-linked B-lymphocyte defect, **993**

**Pettinelli, C. B.** *see* Shearer, Schmitt-Verhulst, Pettinelli, Miller, Gilheany

**Pilarski, L. M.** *see* Waters, Pilarski, Wegmann, Diener

**Plata, F.** *see* Chapdelaine, Plata, Lilly

**Podack, E. R.** *see* Biesecker, Podack, Halverson, Müller-Eberhard

—. *see* Schreiber, Morrison, Podack, Müller-Eberhard

**Primi, D., Lewis, G. K., Triglia, R., Goodman, J. W.,** Rosette formation between murine lymphocytes and erythrocytes. A new locus in the H-2 region, **1349**

**Prud'homme, G. J., Sohn, U., Delovitch, T. L.,** The role of H-2 and Ia antigens in graft-versus-host reactions (GVHR). Presence of host alloantigens on donor cells after GVHR and suppression of GVHR with an anti-Ia antiserum against host Ia antigens, **137**

Q

**Quintans, J.** *see* Kaplan, Quintans

R

**Rabellino, E. M., Nachman, R. L., Williams, N., Winchester, R. J., Ross, G. D.,** Human megakaryocytes. I. Characterization of the membrane and cytoplasmic components of isolated marrow megakaryocytes, **1273**

**Ragsdale, C. G., Arend, W. P.,** Neutral protease secretion by human monocytes. Effect of surface-bound immune complexes, **954**

**Reich, E.** *see* Granelli-Piperno, Vassalli, Reich

**Reid, L. M.** *see* Minato, Bloom, Jones, Holland, Reid

**Reske-Kunz, A. B., Scheid, M. P., Boyse, E. A.,** Disproportion in T-cell subpopulations in immunodeficient mutant *hr / hr* mice, **228**

**Rich, R. R.** *see* Rich, David, Rich

**Rich, S. S., David, C. S., Rich, R. R.,** Regulatory mechanisms in cell-mediated immune responses. VII. Presence of *I-C* subregion determinants on mixed leukocyte reaction suppressor factor, **114**

**Risser, R.,** Friend erythroleukemia antigen. A viral antigen specified by spleen focus forming virus and differentiation antigen controlled by the *Fv-2* locus, **1152**

**Robbins, J. B.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,

**Robbins, K. C.** *see* Barbacid, Robbins, Aaronson

**Rodkey, L. S.** *see* Schalch, Wright, Rodkey, Braun

**Rosen, H., Klebanoff, S. J.,** Bactericidal activity of a superoxide anion-generating system. A model for the polymorphonuclear leukocyte, **27**

**Rosenstreich, D. L.** *see* McGhee, Farrar, Michalek, Mergenhagen, Rosenstreich

**Ross, G. D.** *see* Rabellino, Nachman, Williams, Winchester, Ross

**Rowe, W. P.** *see* Cloyd, Hartley, Rowe

**Ruscetti, F. W.** *see* Collins, Ruscetti, Gallagher, Gallo

S

**Sassa, S.** *see* Urabe, Sassa, Kappas

**Schalch, W., Wright, J. K., Rodkey, L. S., Braun, D. G.,** Distinct functions of monoclonal IgG antibody depend on antigen-site specificities, **923**

**Scheid, M. P.** *see* Reske-Kunz, Scheid, Boyse

**Scher, I.** *see* Subbarao, Mosier, Ahmed, Mond, Scher, Paul
**Schiffman, G.** *see* Kasper, Baker, Baltimore, Crabb, Schiffman, Jennings
**Schmitt-Verhulst, A.-M.** *see* Shearer, Schmitt-Verhulst, Pettinelli, Miller, Gilheany
**Schneerson, R.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,
**Schneider, E. L.** *see* Tice, Schneider, Kram, Thorne
**Schreiber, R. D., Morrison, D. C., Podack, E. R., Müller-Eberhard, H. J.,** Bactericidal activity of the alternative complement pathway generated from 11 isolated plasma proteins, **870**
**Schulte-Wissermann, H.** *see* Hong, Schulte-Wissermann, Jarrett-Toth, Horowitz, Manning
**Schwartz, R. H., Yano, A., Stimpfling, J. H., Paul, W. E.,** Gene complementation in the T-lymphocyte proliferative response to poly(Glu$^{55}$ Lys$^{36}$ Phe$^{9}$)$_n$. A demonstration that both immune response gene products must be expressed in the same antigen-presenting cell, **40**
**Scicli, A. G., Waldmann, R., Guimaraes, J. A., Scicli, G., Carretero, O. A., Kato, H., Han, Y. N., Iwanaga, S.,** Relationship between structure and correcting activity of bovine high molecular weight kininogen upon the clotting time of Fitzgerald-trait plasma, **847**
**Scicli, G.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,
**Serno, M.** *see* Hauptman, Kansu, Serno, Godfrey
**Shaller, D. A.** *see* Parks, Shaller, Weigle
**Shapiro, B. M.** *see* Klebanoff, Foerder, Eddy, Shapiro
**Sharrow, S. O.** *see* Morse, Chused, Hartley, Mathieson, Sharrow, Taylor
**Shaw, S., Biddison, W. E.,** HLA-linked genetic control of the specificity of human cytotoxic T-cell responses to influenza virus, **565**
**Shear, H. L., Nussenzweig, R. S., Bianco, C.,** Immune phagocytosis in murine malaria, **1288**
**Shearer, G. M., Schmitt-Verhulst, A.-M., Pettinelli, C. B., Miller, M. W., Gilheany, P. E.,** H-2-linked genetic control of murine T-cell-mediated lympholysis to autologous cells modified with low concentrations of trinitrobenzene sulfonate, **1407**
—. *see* Levy, Shearer
**Shen, F. W.** *see* Binz, Frischknecht, Shen, Wigzell
—. *see* Kasai, Leclerc, McVay-Boudreau, Shen, Cantor
**Sherer, G. K.** *see* Kahaleh, Sherer, LeRoy
**Shiroishi, T.** *see* Miller, Aikawa, Johnson, Shiroishi
**Silverstein, S. C.** *see* Nathan, Brukner, Silverstein, Cohn
—. *see* Nathan, Silverstein, Brukner, Cohn
**Singer, A., Hathcock, K. S., Hodes, R. J.,** Cellular and genetic control of antibody responses. V. Helper T-cell recognition of H-2 determinants on accessory cells but not B cells, **1208**
**Skidmore, B. J.** *see* Katz, Katz, Bogowitz, Skidmore
**Slack, J.** *see* Perlmutter, Nahm, Stein, Slack, Zitron, Paul, Davie
**Smith, K. A.** *see* Baker, Gillis, Smith
—. *see* Gillis, Union, Baker, Smith
**Sohn, U.** *see* Prud'homme, Sohn, Delovitch
**Sprent, J., von Boehmer, H.,** T-Helper function of parent--→ $F_1$ chimeras. Presence of a separate T-cell subgroup able to stimulate allogeneic B cells but not syngeneic B cells, **387**
**Stastny, P.** *see* Feighery, Stastny
**Stein, K. E.** *see* Perlmutter, Nahm, Stein, Slack, Zitron, Paul, Davie
**Steinman, R. M., Kaplan, G., Witmer, M. D., Cohn, Z. A.,** Identification of a novel cell type in peripheral lymphoid organs of mice. V. Purification of spleen dendritic cells, new surface markers, and maintenance in vitro, **1**
**Stephenson, J. R.** *see* Kende, Hill, Dinowitz, Stephenson, Kelloff
**Stimpfling, J. H.** *see* Schwartz, Yano, Stimpfling, Paul
**Stobo, J. D.** *see* Hausman, Stobo
**Stockert, E., DeLeo, A. B., O'Donnell, P. V., Obata, Y., Old, L. J., G(AKSL2):** A new cell surface antigen of the mouse related to the dualtropic mink cell focus-inducing class of murine leukemia virus detected by naturally occurring antibody, **200**
**Striker, G. E., Mannik, M., Tung, M. Y.,** Role of marrow-derived monocytes and mesangial cells in removal of immune complexes from renal glomeruli, **127**
**Strober, W.** *see* Elson, Heck, Strober
**Strom, T. B.** *see* Hendry, Tilney, Baldwin, Graves, Milford, Strom, Carpenter
**Subbarao, B., Mosier, D. E., Ahmed, A., Mond, J. J., Scher, I., Paul, W. E.,** Role of a non-immunoglobulin cell surface determinant in the activation of B lymphocytes by thymus-independent antigens, **495**
**Sultzer, B. M.** *see* Goodman, Sultzer
**Sutton, A.** *see* Ørskov, Ørskov, Sutton, Schneerson, Lin, Egan, Hoff, Robbins,
**Swain, S. L.** *see* Waterfield, Dennert, Swain, Dutton
**Sy, M.-S., Miller, S. D., Moorhead, J. W., Claman, H. N.,** Active suppression of 1-fluoro-2,4-dinitrobenzene-immune T cells. Requirement of an auxiliary T cell induced by antigen, **1197**

## T

**Tai, J. Y., Gotschlich, E. C., Lancefield, R. C.,** Isolation of type-specific polysaccharide antigen from group B type Ib streptococci, **58**
**Taylor, B. A.** *see* Morse, Chused, Hartley, Mathieson, Sharrow, Taylor
**Teshima, K.** *see* Hamaoka, Fujiwara, Teshima, Aoki, Yamamoto, Kitagawa
**Theofilopoulos, A. N., Eisenberg, R. A., Bourdon, M., Crowell, J. S., Jr., Dixon, F. J.,** Distribution of lymphocytes identified by surface markers in murine strains with systemic lupus erythematosus-like syndromes, **516**
—. *see* Izui, McConahey, Theofilopoulos, Dixon
**Thorne, P.** *see* Tice, Schneider, Kram, Thorne
**Tice, R. R., Schneider, E. L., Kram, D., Thorne, P.,** Cytokinetic analysis of the impaired proliferative response of peripheral lymphocytes from aged humans to phytohemagglutinin, **1029**

**Tilney, N. L.** *see* Hendry, Tilney, Baldwin, Graves, Milford, Strom, Carpenter
**Triglia, R.** *see* Primi, Lewis, Triglia, Goodman
**Tung, M. Y.** *see* Striker, Mannik, Tung

U

**Uhr, J. W.** *see* Cook, Vitetta, Uhr, Capra
**Union, N. A.** *see* Gillis, Union, Baker, Smith
**Urabe, A., Sassa, S., Kappas, A.,** The influence of steroid hormone metabolites on the in vitro development of erythroid colonies derived from human bone marrow, **1314**

V

**van de Rijn, I.** *see* Villarreal, Fischetti, van de Rijn, Zabriskie
**van Furth, R.** *see* van oud Alblas, van Furth
—. *see* vander Meer, Beelen, Fluitsma, van Furth
**van oud Alblas, A. B., van Furth, R.,** Origin, kinetics, and characteristics of pulmonary macrophages in the normal steady state, **1504**
**van Snick, J. L., Masson, P. L.,** Age-dependent production of IgA and IgM autoantibodies against IgG2a in a colony of 129/Sv mice, **1519**
**vander Meer, J. W. M., Beelen, R. H. J., Fluitsma, D. M., van Furth, R.,** Ultrastructure of mononuclear phagocytes developing in liquid bone marrow cultures. A study on peroxidatic activity, **17**
**Vassalli, J.-D.** *see* Granelli-Piperno, Vassalli, Reich
**Villarreal, H., Jr., Fischetti, V. A., van de Rijn, I., Zabriskie, J. B.,** The occurrence of a protein in the extracellular products of streptococci isolated from patients with acute glomerulonephritis, **459**
**Vitetta, E. S.** *see* Buck, Yuan, Vitetta
—. *see* Cook, Vitetta, Uhr, Capra
**von Boehmer, H.** *see* Sprent, von Boehmer

W

**Waldmann, R.** *see* Scicli, Waldmann, Guimaraes, Scicli, Carretero, Kato, Han, Iwanaga,
**Wang, C. Y., Fu, S. M., Kunkel, H. G.,** Isolation and immunological characterization of a major surface glycoprotein (gp54) preferentially expressed on certain human B cells, **1424**
**Wannamaker, L. W.** *see* Benchetrit, Wannamaker, Gray
**Watanabe, K.** *see* Feizi, Childs, Watanabe, Hakomori
**Waterfield, J. D., Dennert, G., Swain, S. L., Dutton, R. W.,** Continuously proliferating allospecific T cells. I. Specificity of cooperation with allogeneic B cells in the humoral antibody response to sheep erythrocytes, **808**
**Waters, C. A., Pilarski, L. M., Wegmann, T. G., Diener, E.,** Tolerance induction during ontogeny. I. Presence of active suppression in mice rendered tolerant to human γ-globulin in utero correlates with the breakdown of the tolerant state, **1134**
**Wegmann, T. G.** *see* Waters, Pilarski, Wegmann, Diener
**Weigle, W. O.** *see* Goodman, Weigle
—. *see* Parks, Shaller, Weigle
**Weinberger, J. Z., Greene, M. I., Benacerraf, B., Dorf, M. E.,** Hapten-specific T-cell responses to 4-hydroxy-3-nitrophenyl acetyl. I. Genetic control of delayed-type hypersensitivity by VH and I-A-region genes, **1336**
**Weinhold, K. J., Goldstein, L. T., Wheelock, E. F.,** The tumor dormant state. Quantitation of L5178Y cells and host immune responses during the establishment and course of dormancy in syngeneic DBA/2 mice, **732**
—. **Miller, D. A., Wheelock, E. F.,** The tumor dormant state. Comparison of L5178Y cells used to establish dormancy with those that emerge after its termination, **745**
**Wetzig, R. P.** *see* Miller, Wetzig, Claman
**Wheelock, E. F.** *see* Weinhold, Goldstein, Wheelock
—. *see* Weinhold, Miller, Wheelock
**Wigzell, H.** *see* Binz, Frischknecht, Shen, Wigzell
—. *see* Kimura, Wigzell, Holmquist, Ersson, Carlsson
**Williams, N.** *see* Rabellino, Nachman, Williams, Winchester, Ross
**Wilson, B. S., Indiveri, F., Pellegrino, M. A., Ferrone, S.,** DR (Ia-like) antigens on human melanoma cells. Serological detection and immunochemical characterization, **658**
**Wilson, D. B.** *see* Bellgrau, Wilson
**Winchester, R. J.** *see* Rabellino, Nachman, Williams, Winchester, Ross
**Witmer, M. D.** *see* Steinman, Kaplan, Witmer, Cohn
**Woda, B. A., Feldman, J. D.,** Density of surface immunoglobulin and capping on rat B lymphocytes. I. Changes with aging, **416**
**Wright, J. K.** *see* Schalch, Wright, Rodkey, Braun
**Wu, T. T.** *see* Kabat, Wu, Bilofsky

Y

**Yamamoto, H.** *see* Hamaoka, Fujiwara, Teshima, Aoki, Yamamoto, Kitagawa
**Yano, A.** *see* Schwartz, Yano, Stimpfling, Paul
**Yoneda, T., Mundy, G. R.,** Prostaglandins are necessary for osteoclast-activating factor production by activated peripheral blood leukocytes, **279**
**Yuan, D.** *see* Buck, Yuan, Vitetta

Z

**Zabriskie, J. B.** *see* Villarreal, Fischetti, van de Rijn, Zabriskie
**Zalman, F., Maloney, M. A., Patt, H. M.,** Differential response of early erythropoietic and granulopoietic progenitors to dexamethasone and cortisone, **67**
**Zitron, I.** *see* Perlmutter, Nahm, Stein, Slack, Zitron, Paul, Davie

# SUBJECT INDEX


A

**Adenocarcinoma**
Hyaluronidase
Lymphocytotoxicity, 507
Surface properties
Immune response, 507

**Agglutination**
Autoantibodies
IgG, 1519

**Aging**
T-Lymphocytes
Cell differentiation, 1029
Immunity, cellular, 1029
Virus, murine leukemia
Antibody-dependent cell cytotoxicity, 358
Immunity, cellular, 358

**Alanine**
T-Lymphocytes
Glutamic acid, 613

**Allergens**
Glutamic acid
Conjugates, immunologic properties, 424
Ragweed pollen, 424
Lysine
Conjugates, immunologic properties, 424
Methoxy polyethylene glycol
Conjugates, immunologic properties, 424
Ragweed pollen, 424
Ragweed pollen
Antigen-antibody reactions, 424
Hemagglutination, 424
Immunosuppression, 424
Lysine, 424

**Alloantigens**
*see* Isoantigens

**Amino acid sequence**
Immunoglobulins, heavy chain
Gene variable region, 1299
Immunoglobulins, light chain
Gene variable region, 1299

**Aminolevulinic acid synthetase**
Androstanes
Erythropoiesis, 1314
Pregnanes
Erythropoiesis, 1314

**Androstanes**
Aminolevulinic acid synthetase
Erythropoiesis, 1314
Erythrocytes
Burst formation, 1314
Colony formation, 1314

**Androstanes (cont'd)**
Erythropoiesis
Bone marrow, 1314
Structure-activity relationship, 1314
Erythropoietin
Cell differentiation, 1314
Uroporphyrinogen I synthetase
Pregnanes, 1314

**Anemia, aplastic**
Histocompatibility antigens
Immunity, cellular, 545
Killer cells, 545
T-Lymphocytes, 545

**Anti-antibodies**
Histocompatibility antigens
Graft *vs* host reaction, 137
T-Lymphocytes
Antilymphocyte serum, 1371
Idiotype suppression, 1371
Immunosuppression, 613
Killer cells, 910
Myeloma proteins, 1371
Phosphorylcholine, 1371
Lymphoid tissue
Antigens, bacterial, 216
B-Lymphocytes, 216
Myeloma proteins
Idiotype regulation, 815
Immune response, mouse, 1371
Immunization, 815
Levan, 815
T-Lymphocytes, 592
Trinitrobenzenes, 592, 815
Peyer's patches
Antigens, bacterial, 216
B-Lymphocytes, 216
*Streptococcus pyogenes*
Hyaluronidase, 73

**Antibody-dependent cell cytotoxicity**
Lymphoma
Immunization, 732
Virus, murine leukemia
Aging, 358
Antigens, viral, 358
Virus, Rauscher murine leukemia
Antigens, viral, 358

**Antibody formation**
Dextran
Genetics, mouse, 1265
Immunoglobulins, heavy chain, 1265
Gamma globulins
Colchicine, 1168
Cyclophosphamide, 1168
IgE

**Antibody formation (cont'd)**
Lymphocytes, 539
Mixed lymphocyte culture supernatant, 539
Suppressive factors of allergy, 539
Immunologic deficiency syndromes
Lymphocyte cooperation, 267
T-Lymphocytes, 267
Myeloma proteins, 267
Phosphorylcholine, 267
B-Lymphocytes
Endotoxins, 713
Lymphocyte cooperation, 808
Thymus-reconstituted nude mice, 398
T-Lymphocytes
Haptens, 267
Lymphocyte cooperation, 808
Transplantation, allogeneic, 1042
Polysaccharides, bacterial
Immunoglobulins, heavy chain, 1227
Spleen, mouse, 1227
*Streptococcus pneumoniae*, 1227
Radiation, ionizing
IgE, 539

**Antibody specificity**
Autoantibodies
IgG, 1519
Histocompatibility antigens
Trophoblast, 1238
Isoantigens
Glycosphingolipids, 975
*Streptococcus pyogenes*
IgG, 923
Polysaccharides, 923
Virus, AKR murine leukemia
Virus, mink cell focus-inducing, 200
Virus, Friend murine spleen focus-forming
Antigens, viral, 1152
Virus, mink cell focus-inducing
Antigenic determinants, 702

**Antigen-antibody complex**
Glomerulonephritis
Mesangial cells, 127
Monocytes, 127
Phagocytosis, 127
Lupus erythematosus, systemic
Immune serums, 1099
Virus, murine leukemia, 1099
T-Lymphocytes
Histocompatibility antigens, 613
Malaria
*Plasmodium berghei*, 1288
Monocytes
Bone marrow, 127
*Plasmodium berghei*
Immune serums, 1288
Virus, murine leukemia
Immune serums, 1099
Viral proteins, 1099

**Antigen-antibody reactions**
Allergens
Ragweed pollen, 424
Antigens, theta

**Antigen-antibody reactions (cont'd)**
Quantitative absorption analysis, 576
*p*-Azobenzenearsonate
Antigenic determinants, 1069
*Escherichia coli*
Polysaccharides, bacterial, 669
Gamma globulins
Haptens, 1134
Histocompatibility antigens
Antigenic determinants, 1084
Immunologic deficiency syndromes
Antigens, bacterial, 993
Lipopolysaccharides, 993
Lipopolysaccharides
B-Lymphocytes, 793
T-Lymphocytes, 793
B-Lymphocytes
IgD, 987
IgM, 987
Isoantigens, 495
X-linked defect, mouse, 993
T-Lymphocytes
*p*-Azobenzenearsonate, 1084
Haptens, 1208
Histocompatibility antigens, 1208
Lymphocyte cooperation, 1208, 1543
Melanoma
Histocompatibility antigens, 658
*Plasmodium berghei*
Forssman antigen, 1288
Radiation chimera
Lymphocyte cooperation, 780
T-Lymphocytes, 780
*Streptococcus agalactiae*
Antigenic determinants, 327
Antigens, bacterial, 327
Immune serums, 327
Immunization, 327
Polysaccharides, bacterial, 58
*Streptococcus pyogenes*
Antigens, 1438
IgG, 923
Immune serums, 923
Virus, AKR murine leukemia
Cell transformation, neoplastic, 200
Virus, mink cell focus-inducing, 200

***H-2* antigen**
*see* Histocompatibility antigens

**Antigenic determinants**
Autoantibodies
IgG, 1519
*p*-Azobenzenearsonate
Antigen-antibody reactions, 1069
Hypersensitivity, delayed, 1069
*Escherichia coli*
Form variants, K1 antigen, 669
Histocompatibility antigens
Antigen-antibody reactions, 1084
Hypersensitivity, delayed, 1069
Immune response, mouse, 40
Immunosuppression, 114
Isoantigens
Galactose, 975

**Antigenic determinants (cont'd)**
B-Lymphocytes
Glycoproteins, 1424
Histocompatibility antigens, 1208
T-Lymphocytes
Cytochrome C, 436
Histocompatibility antigens, 1208
Hypersensitivity, delayed, 1197
Lymphocyte cooperation, 1208
Lymphoma
Antigens, viral, 1152
*Streptococcus agalactiae*
Antigen-antibody reactions, 327
Polysaccharides, bacterial, 58
*Streptococcus pyogenes*
Hyaluronidase, 73
Trophoblast
Cell membrane, 824
Virus, AKR murine leukemia
Virus, mink cell focus-inducing, 702
Virus, recombinant, 702
Virus, C-type RNA tumor
Mouse, wild, 254
Virus, Friend murine leukemia, 254
Virus, Moloney murine leukemia, 254
Virus, Rauscher murine leukemia, 254
Virus, mink cell focus-inducing
Antibody specificity, 702
Immunofluorescence absorption assay, 702
Virus, murine leukemia
Virus, mink cell focus-inducing, 702

**Antigens**
T-Lymphocytes
Idiotype suppression, 1371
Phosphorylcholine
Immune response, mouse, 1371
*Streptococcus pyogenes*
Antigen-antibody reactions, 1438
Mitogens, 1438
Trophoblast
Cell-cell interactions, 824
Lymphocyte culture test, mixed, 824
Virus, AKR murine leukemia
Cell membrane, 200, 702
Virus, mink cell focus-inducing
Cell membrane, 702

**Antigens, bacterial**
*Escherichia coli*
Form variants, K1 antigen, 669
Glomerulonephritis
*Streptococcus pyogenes*, 459
Immunologic deficiency syndromes
Antigen-antibody reactions, 993
B-Lymphocytes, 993
Lymphoid tissue
Anti-antibodies, 216
Peyer's patches
Anti-antibodies, 216
Phosphorylcholine, 216
*Streptococcus agalactiae*
Antigen-antibody reactions, 327
Polysaccharides, 327
Vaccines, 327

**Antigens, bacterial (cont'd)**
*Streptococcus pyogenes*
Isolation and characterization, 459

**Antigens, neoplasm**
Lymphoma
Immunity, cellular, 745
Tumor dormancy, 745

**Antigens, theta**
Antigen-antibody reactions
Quantitative absorption analysis, 576
Brain
Tissue distribution, 576
T-Lymphocytes
Tissue distribution, 576
Lymphoma
Immunity, cellular, 732
Thymus gland
Tissue distribution, 576
Tissue distribution
Species difference, man, dog, 576

**Antigens, viral**
Erythroleukemia
Virus, Friend murine spleen focus-forming 1152
Lymphoma
Antigenic determinants, 1152
Virus, Friend murine spleen focus-forming 1152
Virus, Friend murine spleen focus-forming
Antibody specificity, 1152
Cell membrane, 1152
Virus, murine leukemia
Antibody-dependent cell cytotoxicity, 358
Chromosomes, 1183
Flow microfluorometry, 1183
Genetic crosses, 1183
Lymphocytes, 1183
Virus, Rauscher murine leukemia
Antibody-dependent cell cytotoxicity, 358
Virus, Sindbis
Histocompatibility antigens, 786

**Antilymphocyte serum**
T-Lymphocytes
Anti-antibodies, 1371

**Arachidonic acid**
Lymphocytes
Blood proteins, 1487
Calcium, 1487
Fatty acids, 1487
Phosphatidylinositols, 1487
Phospholipase, 1487
Plant agglutinins, 1487
Radioactivity release, 1487
Phospholipase
Lymphocyte transformation, 1487

**Autoantibodies**
Age factors
Mouse, 129/Sv, 1519
IgA
Mouse, 129/Sv, 1519
IgG

**Autoantibodies (cont'd)**
Agglutination, 1519
Antibody specificity, 1519
Antigenic determinants, 1519
IgM
Mouse, 129/Sv, 1519
Isoantigens
Glycosphingolipids, 975

***p*-Azobenzenearsonate**
Antigen-antibody reactions
Antigenic determinants, 1069
Antigenic determinants
Hypersensitivity, delayed, 1069
T-Lymphocytes
Antigen-antibody reactions, 1084
Hypersensitivity, delayed, 1069, 1084
Suppressor factor(s), 1084

**B**

***Bacillus Calmette-Guerin***
Granulocytes
Cytolysis, P388 cells, 84
Immunization
Phagocytosis, 1056
Lymphoma
Macrophages, 100
Macrophages
Cytolysis, P388 cells, 84
*Trypanosoma cruzi*
Phagocytosis, 1056

**Bacteriolysis**
Blood proteins
Complement, 870
*Escherichia coli*
Blood proteins, 870
Complement, 870
Muramidase, 870
Phospholipids, 870
Ultrastructural study, 870
Neutrophils
Benzoic acid, 27
Myeloperoxidase, 27
*Sarcina lutea*, 27
Singlet oxygen, 27
*Staphylococcus aureus*, 27
Superoxide dismutase, 27
Xanthine oxidase, 27

**Bacteriophages**
*Streptococcus pyogenes*
Streptococcus group A, 73

**Basement membrane**
Diabetic nephropathies
Agarose gel analysis, 623
Kidney glomerulus, 623
Streptozotocin, 623

**Benzene, 1-fluoro-2,4-dinitro-**
T-Lymphocytes
Hypersensitivity, delayed, 1197

**Benzoic acid**
Neutrophils
Bacteriolysis, 27

**Beta globulins**
Cell membrane
Null cells, 158
T-Lymphocytes
Cell membrane, 158
Isolation and characterization, 158
Null cells
Isolation and characterization, 158

**Blood platelets**
Complement
Cell differentiation, 1273
Receptors, 1273
IgG
Cell differentiation, 1273
Receptors, 1273
Immunoglobulins, Fc
Cell differentiation, 1273
Receptors, 1273
Isoantigens
Cell differentiation, 1273
Megakaryocytes
Glycoproteins, 1273
Myosin, 1273

**Blood proteins**
Complement
Bacteriolysis, 870
*Escherichia coli*
Bacteriolysis, 870
Lymphocytes
Arachidonic acid, 1487

**Bone marrow**
Androstanes
Erythropoiesis, 1314
Glomerulonephritis
Transplantation, homologous, 127
Macrophages
Peroxidases, 17
Ultrastructural study, mouse, 17
Megakaryocytes
Factor VII, 1273
Fibrinogen, 1273
Myosin, 1273
Monocytes
Antigen-antibody complex, 127
Peroxidases, 17
Ultrastructural study, mouse, 17
Phagocytes
Peroxidases, 17
Ultrastructural study, mouse, 17
Pregnanes
Erythropoiesis, 1314

***Bordetella pertussis***
Leukemia L1210
T-Lymphocytes, 1393
Lymphocyte cooperation
Cell differentiation, 1001
B-Lymphocytes
Lymphocyte cooperation, 1001
T-Lymphocytes

**_Bordetella pertussis_ (cont'd)**
Cell differentiation, 1001
Immunity, cellular, 1393
Lymphocytosis promoting factor, 1393
Mitogens, 1001
Mitomycin C, 1393
Lymphoma
T-Lymphocytes, 1393
Sarcoma, mast cell
T-Lymphocytes, 1393

**Brain**
Antigens, theta
Tissue distribution, 576

**Bromodeoxyuridine**
*see* Uridine, 5-bromo-2'-deoxy-

C

**Calcium**
Lymphocytes
Arachidonic acid, 1487

**Casein**
Macrophages
Cytolysis, P388 cells, 84

**Cell adhesion**
Dendrites
Spleen, 1
Erythrocytes
Chymotrypsin, 172
Malaria
Cytochalasin B, 172
Isoantigens, 172

**Cell differentiation**
Androstanes
Erythropoietin, 1314
Blood platelets
Complement, 1273
IgG, 1273
Immunoglobulins, Fc, 1273
Isoantigens, 1273
*Bordetella pertussis*
Lymphocyte cooperation, 1001
Chimera
T-Lymphocytes, 686
Dendrites
Concanavalin A, 1
Lipopolysaccharides, 1
Glutamic acid
Terpolymer, 40
Leukemia, myelocytic
Cells, cultured, 969
Chemotaxis, 969
Dimethyl sulfoxide, 969
Receptors, complement, 969
Superoxide, 969
B-Lymphocytes
Immunoglobulins, surface, 553
Isoantigens, 495
Lipopolysaccharides, 553
Lipoproteins, 553
Mitogens, 553

**Cell differentiation (cont'd)**
T-Lymphocytes
Aging, 1029
*Bordetella pertussis*, 1001
Cells, cultured, 1460
Cytochrome C, 436
Glutamic acid, 40
Growth substances, 1460
Histocompatibility antigens, 1537
Immune response, mouse, 40
Isoantigens, 1460
Lymphocyte cooperation, 1001, 1360
Monocytes, 1537
Peptides, 436
Plant agglutinins, 1029
Megakaryocytes
Complement, 1273
IgG, 1273
Isoantigens, 1273
Pregnanes
Erythropoietin, 1314
Radiation chimera
T-Lymphocytes, 686
Radiation, ionizing
B-Lymphocytes, 1360
Steroids
Erythrocytes, 1314
Structure-activity relationship, 1314
Thymus Gland
T-Lymphocytes, 686

**Cell division**
Macrophages
Lung, 1504
Monocytes, 1504
Radiation, ionizing
Macrophages, 1504
Raynaud's disease
Endothelium, 1326
Scleroderma, systemic
Endothelium, 1326

**Cell membrane**
*see also* Membranes
Beta globulins
Null cells, 158
Erythrocytes
Complement, 448
Histocompatibility antigens
Isoantigens, 981
Isoantigens
Genes, immune response, 981
B-Lymphocytes
Glycoproteins, 1424
T-Lymphocytes
Beta globulins, 158
Glycoproteins, 473
Megakaryocytes
Platelet-associated components, 1273
Trophoblast
Antigenic determinants, 824
Virus, AKR murine leukemia
Antigens, 200, 702
Virus, Friend murine spleen focus-forming
Antigens, viral, 1152

**Cell membrane (cont'd)**
Virus, mink cell focus-inducing
Antigens, 702

**Cell transformation, neoplastic**
Virus, AKR murine leukemia
Antigen-antibody reactions, 200

**Cell transformation, viral**
Cyclophosphamide
Immunity, cellular, 774
Virus, Friend murine spleen focus-forming
Hematopoietic stem cells, 340
Virus, helper, 340
Virus, SV40
T-Lymphocytes, 774

**Cells, cultured**
Leukemia, myelocytic
Cell differentiation, 969
T-Lymphocytes
Cell differentiation, 1460
Growth substances, 273
Lymphocytotoxicity, 273
Mouse, nude, 1460
Neutrophils
Proteins, 284
RNA replication, 284
Phagocytes
Peroxidases, 17

**Chemotaxis**
Leukemia, myelocytic
Cell differentiation, 969

**Chimera**
Lymphocyte cooperation
Genetic restriction, 686
Histocompatibility antigens, 686
T-Lymphocytes
Cell differentiation, 686

**Cholanthrene, 3-methyl-**
Lymphoma
Transplantation immunology, 732, 745

**Chromosomes**
Virus, murine leukemia
Antigens, viral, 1183

**Chymostatin**
Monocytes
Plasminogen activators, 954

**Chymotrypsin**
Erythrocytes
Cell adhesion, 172

**Colchicine**
Gamma globulins
Antibody formation, 1168
Immune tolerance, 1168
B-Lymphocytes, 1168
T-Lymphocytes, 1168
B-Lymphocytes
Immune tolerance, 1168
Immunoglobulins, surface, 416
T-Lymphocytes
Immune tolerance, 1168

**Complement**
Blood platelets
Cell differentiation, 1273
Receptors, 1273
Blood proteins
Bacteriolysis, 870
Erythrocytes
Cell membrane, 448
Hemolysis, 448
Membrane attack complex, 448
*Escherichia coli*
Bacteriolysis, 870
Lupus erythematosus, systemic
B-Lymphocytes, 516
Megakaryocytes
Cell differentiation, 1273
Receptors, 1273
Membrane attack complex
Isolation and characterization, 448
Phospholipids
Membrane attack complex, 448

**Complement 3**
Macrophages
Immune receptors, mouse, 1504
Lung, 1504

**Concanavalin A**
Dendrites
Cell differentiation, 1
T-Lymphocytes
Immunoglobulins, 632
Mitomycin C, 1393
Neutrophils
RNA replication, 284

**Correction**, 551

**Cortisol acetate**
Monocytes
Influx, lung, mouse, 1504
Monocytopenia
Influx, lung, mouse, 1504

**Cortisone**
Erythrocytes
Hematopoiesis, 67
Granulocytes
Hematopoiesis, 67
Hematopoiesis
Bone marrow, mouse, 67
Dose-response study, 67

***Corynebacterium parvum***
Macrophages
Cytolysis, P388 cells, 84

**Cyclophosphamide**
Gamma globulins
Antibody formation, 1168
Haptens
Immunity, cellular, 290
Histocompatibility antigens
Immunity, cellular, 290
Hypersensitivity, delayed
Age factors, mouse, 1018
Thymectomy, 1018

**Cyclophosphamide (cont'd)**
Immunity, cellular
Cell transformation, viral, 774
T-Lymphocytes
Histocompatibility antigens, 290
Hypersensitivity, delayed, 1018, 1197, 1336
Immunity, cellular, 774
Spleen cell cytotoxicity, 290
Serum albumin
Hypersensitivity, delayed, 1018
Thyroid gland
Transplantation, allogeneic, 1254
Virus, SV40
Histocompatibility antigens, 774
Immunity, cellular, 774
Immunization, 774

**Cytochalasin B**
Malaria
Cell adhesion, 172
Merozoites, 172

**Cytochrome C**
Freund's adjuvant
Immunity, cellular, 758
Hypersensitivity, delayed
Immunity, cellular, 758
Lymphocytes
Immunologic techniques, 758
T-Lymphocytes
Antigenic determinants, 436
Cell differentiation, 436
Cross reactions, 436
Immunosuppression, 758

**Cytoplasm**
Megakaryocytes
Platelet-associated components, 1273

D

**Dendrites**
Cell differentiation
Concanavalin A, 1
Lipopolysaccharides, 1
Spleen
Cell adhesion, 1
Histocompatibility antigens, 1
Isoantigens, 1
Isolation and characterization, mouse, 1
Ultrastructural study, mouse, 1

**Dexamethasone**
Erythrocytes
Hematopoiesis, 67
Granulocytes
Hematopoiesis, 67
Hematopoiesis
Bone marrow, mouse, 67
Dose-response study, 67

**Dextran**
Antibody formation
Genetics, mouse, 1265
Immunoglobulins, heavy chain, 1265

**Diabetic nephropathies**
Basement membrane
Agarose gel analysis, 623
Kidney glomerulus
Basement membrane, 623
Streptozotocin
Animal model, rat, 623
Basement membrane, 623
Kidney glomerulus, 623

**Dimethyl sulfoxide**
Leukemia, myelocytic
Cell differentiation, 969
Granulocytes, 969

**DNA**
Immunoglobulins, heavy chain
Germ-line minigenes, 1299
Somatic assembly, 1299
Immunoglobulins, light chain
Germ-line minigenes, 1299
Somatic assembly, 1299
*Streptococcus pneumoniae*
[Land-mark 1944 article], 297
Transforming factor, 297

**DNA, viral**
Virus, C-type RNA tumor
DNA-DNA hybridization, 254

E

**Elastase**
*see* Pancreatopeptidase

**Endoplasmic reticulum**
Kupffer cells
Peroxidases, 883

**Endothelium**
Fibroblasts
Morphologic study, 1326
Raynaud's disease
Cell division, 1326
Immune serums, 1326
Morphologic study, 1326
Scleroderma, systemic
Cell division, 1326
Factor VIII, 1326
Immune serums, 1326
Morphologic study, 1326

**Endotoxins**
B-Lymphocytes
Antibody formation, 713
*Escherichia coli*, 713
Lipopolysaccharides, 713
Lymphocyte proliferation, 713
Polyclonal activation, 713

**Erythrocytes**
Androstanes
Burst formation, 1314
Colony formation, 1314
Chymotrypsin
Cell adhesion, 172
Complement

**Erythrocytes (cont'd)**
Cell membrane, 448
Hemolysis, 448
Membrane attack complex, 448
Cortisone
Hematopoiesis, 67
Dexamethasone
Hematopoiesis, 67
B-Lymphocytes
Rosette formation, 1349
T-Lymphocytes
Rosette formation, 1349
Malaria
Merozoites, 172
*Plasmodium berghei*
Phagocytosis, 1288
Pregnanes
Burst formation, 1314
Colony formation, 1314
Steroids
Cell differentiation, 1314
Transplantation, allogeneic
Immunity, cellular, 1042

**Erythroleukemia**
Virus, Friend murine spleen focus-forming
Antigens, viral, 1152
*Steel* locus, 837
Precancerous conditions, 340

**Erythropoiesis**
Androstanes
Aminolevulinic acid synthetase, 1314
Bone marrow, 1314
Structure-activity relationship, 1314
Pregnanes
Aminolevulinic acid synthetase, 1314
Bone marrow, 1314
Structure-activity relationship, 1314
Uroporphyrinogen I synthetase, 1314
Virus, Friend murine spleen focus-forming
*Steel* locus, 837

**Erythropoietin**
Androstanes
Cell differentiation, 1314
Pregnanes
Cell differentiation, 1314

***Escherichia coli***
Antigenic determinants
Form variants, K1 antigen, 669
Antigens, bacterial
Form variants, K1 antigen, 669
Bacteriolysis
Phospholipids, 870
Ultrastructural study, 870
Blood proteins
Bacteriolysis, 870
Complement
Bacteriolysis, 870
Form variants, K1 antigen
Biochemical, immunological properties, 669
B-Lymphocytes
Endotoxins, 713
Muramidase

***Escherichia coli* (cont'd)**
Bacteriolysis, 870
Polysaccharides, bacterial
*O*-acetylation, 669
Antigen-antibody reactions, 669
Form variants, K1 antigen, 669
Neuraminidase, 669

**Estradiol**
Ionophore A23187
Sea urchin eggs, 938
Peroxidases
Ovum, 938
Receptors, hormone
Sea urchin eggs, 938

**Ethanol, 2-mercapto-**
B-Lymphocytes
Lymphocyte cooperation, 644
Lymphocyte transformation, 644
T-Lymphocytes
Lymphocyte cooperation, 644
Lymphocyte transformation, 644

F

**Factor VII**
Megakaryocytes
Bone marrow, 1273

**Factor VIII**
Scleroderma, systemic
Endothelium, 1326

**Factor XI**
Kininogens
Contact activation, 847

**Factor XII**
Kininogens
Contact activation, 847

**Fatty acids**
Lymphocytes
Arachidonic acid, 1487
Phosphatidylinositols, 1487
Plant agglutinins, 1487

**Fertilization**
Peroxidases
Membranes, 938
Sea urchin eggs, 938

**Fibrinogen**
Megakaryocytes
Bone marrow, 1273

**Fibrinolysis**
Monocytes
Pancreatopeptidase, 954

**Fibroblasts**
Endothelium
Morphologic study, 1326
Scleroderma, systemic
Morphologic study, 1326

**Fibrosarcoma**
Hyaluronidase

**Fibrosarcoma (cont'd)**
Lymphocytotoxicity, 507
T-Lymphocytes
Hyaluronidase, 507
Lymphocytotoxicity, 507
Surface properties
Immune response, 507

**1-Fluoro-2,4-dinitrobenzene**
*see* Benzene, 1-fluoro-2,4-dinitro-

**Forssman antigen**
*Plasmodium berghei*
Antigen-antibody reactions, 1288

**Freund's adjuvant**
Cytochrome C
Immunity, cellular, 758
Gamma globulins
Immunity, cellular, 758

**Furan, 2,5-diphenyl-**
Neutrophils
Xanthine oxidase, 27

G

**Galactose**
Isoantigens
Antigenic determinants, 975

**Gamma globulins**
Antigen-antibody reactions
Haptens, 1134
Colchicine
Antibody formation, 1168
Immune tolerance, 1168
B-Lymphocytes, 1168
T-Lymphocytes, 1168
Cyclophosphamide
Antibody formation, 1168
Freund's adjuvant
Immunity, cellular, 758
Haptens
Immune tolerance, 1134
Hypersensitivity, delayed
Antigen administration route, 758
Immunity, cellular
Antigen administration route, 758
Lymphocytes
Immunologic techniques, 758
B-Lymphocytes
Immune tolerance, 1134
Tolerance induction, *in utero*, 1134
T-Lymphocytes
Haptens, 1336
Immune tolerance, 1134
Immunosuppression, 758
Tolerance induction, *in utero*, 1134

**Genes, immune response**
Isoantigens
Cell membrane, 981
$\alpha,\beta$ Chains, 981
B-Lymphocytes
Rosette formation, 1349
T-Lymphocytes
Rosette formation, 1349
Trinitrobenzenes, 1379, 1407

**Genetics**
Virus, influenza
Immune response, mouse, 601

**Glomerulonephritis**
Antigen-antibody complex
Mesangial cells, 127
Monocytes, 127
Phagocytosis, 127
Bone marrow
Transplantation, homologous, 127
Lupus erythematosus, systemic
Immune complex disease, mouse, 1099
*Streptococcus pyogenes*
Antigens, bacterial, 459

**Glucan**
Kupffer cells
Cytochemical, ultrastructural study, 883
Liver, rat, 883
Peroxidases, 883
Monocytes
Kupffer cells, 883

**Glucocorticoids**
Neutrophils
RNA replication, 284

**Glucosidases**
Macrophages
Hydrogen peroxide, 1056

**Glutamic acid**
Allergens
Conjugates, immunologic properties, 424
Ragweed pollen, 424
Histocompatibility antigens
Immune response, mouse, 40
T-Lymphocytes
Alanine, 613
Cell differentiation, 40
Immunosuppressive factors, 613
Terpolymer
Cell differentiation, 40
Histocompatibility antigens, 40
T-Lymphocytes, 40

**Glycoproteins**
Leukemia, lymphocytic
B-Lymphocytes, 1424
B-Lymphocytes
Antigenic determinants, 1424
Cell membrane, 1424
Immunoprecipitation, 1424
Isolation and immunological characterization 1424
Tonsil, 1424
T-Lymphocytes
Cell membrane, 473
Immunity, cellular, 473
Immunoprecipitation, 1424
Plant agglutinins, 473
*Vicia villosa*, 473

**Glycoproteins (cont'd)**
Megakaryocytes
Blood platelets, 1273

**Glycosphingolipids**
Isoantigens
Antibody specificity, 975
Autoantibodies, 975

**Graft *vs* host reaction**
Histocompatibility antigens
Anti-antibodies, 137
B-Lymphocytes, 234
T-Lymphocytes, 137, 234
Phenotype, mouse, 137
Radiation, ionizing, 137
T-Lymphocytes
Immunogenetics, rat, 234

**Graft rejection**
Histocompatibility antigens
Immune response, rat, 244
Skin
Thymus-reconstituted nude mice, 398
Thyroid gland
Histocompatibility antigens, 1254
Transplantation, allogeneic, 1254

**Graft survival**
T-Lymphocytes
Immunization, 1042
Transplantation, allogeneic, 1042

**Granulocytes**
*Bacillus Calmette-Guerin*
Cytolysis, P388 cells, 84
Cortisone
Hematopoiesis, 67
Cytolysis, P388 cells
Phorbol myristate acetate, 84
Dexamethasone
Hematopoiesis, 67
Hydrogen peroxide
Cytolysis, P388 cells, 100
Leukemia, myelocytic
Dimethyl sulfoxide, 969
Lymphoma
Cytolysis, P388 cells, 84, 100
Phorbol myristate acetate, 100
Phorbol myristate acetate
Hydrogen peroxide, 84

**Growth substances**
T-Lymphocytes
Cell differentiation, 1460
Cells, cultured, 273
Immunity, cellular, 1460
Isoantigens, 1460
Lymphocyte culture test, mixed, 1460

**H**

**Haptens**
Cyclophosphamide
Immunity, cellular, 290
Gamma globulins
Antigen-antibody reactions, 1134

**Haptens (cont'd)**
Immune tolerance, 1134
(4-hydroxy-5-iodo-3-nitrophenyl)acetyl-
Hypersensitivity, delayed, 1336
T-Lymphocytes, 1336
(4-hydroxy-3-nitrophenyl)acetyl-
Hypersensitivity, delayed, 1336
T-Lymphocytes, 1336
B-Lymphocytes
IgD, 987
T-Lymphocytes
Antibody formation, 267
Antigen-antibody reactions, 1208
Hypersensitivity, delayed, 1069, 1336
Immunogenetics, 1336
Immunologic techniques, 185

**HeLa cells**
Virus, influenza
Transplantation immunology, 1117
Virus, measles
Transplantation immunology, 1117
Virus, mumps
Transplantation immunology, 1117
Virus, RNA tumor
Transplantation immunology, 1117
Virus, vesicular stomatitis
Transplantation immunology, 1117

**Helper cells**
*see* Lymphocyte cooperation

**Hemagglutination**
Allergens
Ragweed pollen, 424

**Hemagglutinins, viral**
Histocompatibility antigens
Immunity, cellular, 856
Virus, influenza type A
Histocompatibility antigens, 856
Immunity, cellular, 856
T-Lymphocytes, 856

**Hematopoiesis**
Cortisone
Bone marrow, mouse, 67
Dose-response study, 67
Erythrocytes, 67
Granulocytes, 67
Dexamethasone
Bone marrow, mouse, 67
Dose-response study, 67
Erythrocytes, 67
Granulocytes, 67

**Hematopoietic stem cells**
Virus, Friend murine spleen focus-forming
Cell transformation, viral, 340
Transplantation, homologous, 340

**Hemolysis**
Erythrocytes
Complement, 448

**Histocompatibility antigens**
Anemia, aplastic
Immunity, cellular, 545

**Histocompatibility antigens (cont'd)**
Killer cells, 545
T-Lymphocytes, 545
Antigen-antibody reactions
Antigenic determinants, 1084
Antigenic determinants
Hypersensitivity, delayed, 1069
Immune response, mouse, 40
Chimera
Lymphocyte cooperation, 686
Cyclophosphamide
Immunity, cellular, 290
T-Lymphocytes, 290
Dendrites
Spleen, 1
Glutamic acid
Immune response, mouse, 40
Terpolymer, 40
Graft *vs* host reaction
Anti-antibodies, 137
B-Lymphocytes, 234
T-Lymphocytes, 137, 234
Phenotype, mouse, 137
Graft rejection
Immune response, rat, 244
Hemagglutinins, viral
Immunity, cellular, 856
Hybrid mouse
Macrophages, spleen cells, 724
Hypersensitivity, delayed
Suppressor factor(s), 1084
Immune serums
Leukocyte culture test, mixed, 114
Immunity, cellular
Hybrid mouse, 724
Immunoglobulins, heavy chain
Hypersensitivity, delayed, 1336
Immunosuppression
Antigenic determinants, 114
Isoantigens
Cell membrane, 981
Kidney
Transplantation, allogeneic, 244
Lupus erythematosus, systemic
T-Lymphocytes, 516
Lymphocyte cooperation
Thymic chimera, 1360
B-Lymphocytes
Antigenic determinants, 1208
Immune response genes, 780
Immunity, cellular, 485
Isolation and characterization, DR antigens 658
Lymphocyte cooperation, 1208, 1360
Rosette formation, 1349
T-Lymphocytes
Antigen-antibody complex, 613
Antigen-antibody reactions, 1208
Antigenic determinants, 1208
Cell differentiation, 1537
Hybrid mouse, 724
Hypersensitivity, delayed, 1069, 1084
Immune response genes, 780
Immunity, cellular, 114, 485, 724, 910, 1379

**Histocompatibility antigens (cont'd)**
Immunogenetics, rat, 234
Immunoglobulins, 1537
Killer cells, 545
Leukocyte culture test, mixed, 910
Lymphocyte cooperation, 780, 808, 1208 1360, 1537
B-Lymphocytes, 1537
Radiation chimera, 40
Rosette formation, 1349
Trinitrobenzenes, 1379, 1407
Macrophages
Immune response genes, 780
Melanoma
Antigen-antibody reactions, 658
$\beta$-chain structure, 658
Indirect rosette microassay, 658
Isolation and characterization, DR antigens 658
Monocytes
Immunity, cellular, 485
Plasmacytoma
T-Lymphocytes, 185
Radiation chimera
Immune response genes, 780
Immune response, mouse, 40
Lymphocyte cooperation, 686
T-Lymphocytes, 387, 535, 780
Virus, Sindbis, 786
Radiation, ionizing
Graft *vs* host reaction, 137
Thyroid gland
Graft rejection, 1254
Transplantation, allogeneic, 1254
Transplantation, allogeneic
Immune response, rat, 244
Trophoblast
Antibody specificity, 1238
Haplotype, mouse, 1238
Virus, Friend murine leukemia
Immune response, 340
Virus, Friend murine spleen focus-forming
Immune response, 340
Virus, influenza
Immunity, cellular, 565
T-Lymphocytes, 565
Virus, influenza type A
Hemagglutinins, viral, 856
Virus, Moloney murine sarcoma
T-Lymphocytes, 1531
Virus, pox
Immune response, 724
Lymphocyte culture test, mixed, 724
Macrophage cytotoxicity, 724
Virus, radiation leukemia
Immunity, cellular, 898
T-Lymphocytes, 898
Virus, Sindbis
Antigens, viral, 786
Immune response, mouse, 786
T-Lymphocytes, 786
Virus, SV40
Cyclophosphamide, 774
Immunity, cellular, 774

**Histocompatibility antigens (cont'd)**
Immunization, 774
Virus, vaccinia
Binding sites, 150
T-Lymphocytes, 150
Radiation, ionizing, 150
Thymus gland, 150

**Hyaluronidase**
Adenocarcinoma
Lymphocytotoxicity, 507
Fibrosarcoma
T-Lymphocytes, 507
Lymphocytotoxicity, 507
Mammary neoplasms, experimental
Lymphocytotoxicity, 507
*Streptococcus pyogenes*
Anti-antibodies, 73
Antigenic determinants, 73
Enzymatic activity, 73

**Hydrocortisone acetate**
*see* Cortisol acetate

**Hydrogen peroxide**
Granulocytes
Cytolysis, P388 cells, 100
Phorbol myristate acetate, 84
Ionophore A23187
Sea urchin eggs, 938
Lymphoma
Cytolysis, P388 cells, 100
Phorbol myristate acetate, 84
Macrophages
Glucosidases, 1056
Phagocytosis, 1056
Phorbol myristate acetate, 84, 1056
Ovum
Degradation, 938

**Hypersensitivity, delayed**
*p*-Azobenzenearsonate
Antigenic determinants, 1069
Cyclophosphamide
Age factors, mouse, 1018
Serum albumin, 1018
Thymectomy, 1018
Cytochrome C
Immunity, cellular, 758
Gamma globulins
Antigen administration route, 758
Haptens
(4-hydroxy-5-iodo-3-nitrophenyl)acetyl-, 1336
(4-hydroxy-3-nitrophenyl)acetyl-, 1336
Histocompatibility antigens
Antigenic determinants, 1069
Suppressor factor(s), 1084
Immunoglobulins, heavy chain
Gene variable region, 1336
Histocompatibility antigens, 1336
T-Lymphocytes
Age factors, mouse, 1018
Antigenic determinants, 1197
*p*-Azobenzenearsonate, 1069, 1084
Benzene, 1-fluoro-2,4-dinitro-, 1197
Cyclophosphamide, 1018, 1197, 1336

**Hypersensitivity, delayed (cont'd)**
Haptens, 1069, 1336
Histocompatibility antigens, 1069, 1084
Immunity, passive, 1197
Immunosuppression, 1018, 1197
Suppressor factor(s), 1069, 1084
Serum albumin, bovine
Immunoglobulins, heavy chain, 1336

I

**Ia antigens**
*see* Isoantigens

**IgA**
Autoantibodies
Mouse, 129/Sv, 1519
T-Lymphocytes
Lymphocyte cooperation, 632
Peyer's patches, 632
Peyer's patches
B-Lymphocytes, 216

**IgD**
B-Lymphocytes
Antigen-antibody reactions, 987
Haptens, 987
Lymphocyte cooperation, 987
T-Lymphocytes
Lymphocyte cooperation, 987

**IgE**
Antibody formation
Lymphocytes, 539
Mixed lymphocyte culture supernatant, 539
Suppressive factors of allergy, 539
Radiation, ionizing
Antibody formation, 539

**IgG**
Autoantibodies
Agglutination, 1519
Antibody specificity, 1519
Antigenic determinants, 1519
Blood platelets
Cell differentiation, 1273
Receptors, 1273
Immunologic deficiency syndromes
B-Lymphocytes, 993
B-Lymphocytes
Lymphocyte cooperation, 1360
T-Lymphocytes
Lymphocyte cooperation, 1360
Megakaryocytes
Cell differentiation, 1273
Receptors, 1273
*Streptococcus pyogenes*
Antibody specificity, 923
Antigen-antibody reactions, 923
Immune serums, 923

**IgM**
Autoantibodies
Mouse, 129/Sv, 1519
Immunologic deficiency syndromes
B-Lymphocytes, 993

**IgM (cont'd)**
B-Lymphocytes
Antigen-antibody reactions, 987
Immunoglobulins, surface, 553

**Immune serums**
Histocompatibility antigens
Leukocyte culture test, mixed, 114
Lupus erythematosus, systemic
Antigen-antibody complex, 1099
Lymphoma
Cytophilic antibody, 732
Peritoneal cells, 732
*Plasmodium berghei*
Antigen-antibody complex, 1288
Phagocytosis, 1288
Raynaud's disease
Cytotoxic activity, 1326
Endothelium, 1326
Thymidine incorporation, 1326
Scleroderma, systemic
Cytotoxic activity, 1326
Endothelium, 1326
Thymidine incorporation, 1326
*Streptococcus agalactiae*
Antigen-antibody reactions, 327
*Streptococcus pyogenes*
Antigen-antibody reactions, 923
IgG, 923
Trophoblast
Lymphocyte culture test, mixed, 824
Virus, murine leukemia
Antigen-antibody complex, 1099
Blocking activity, 358
Virus, Rauscher murine leukemia
Blocking activity, 358

**Immune tolerance**
Colchicine
B-Lymphocytes, 1168
T-Lymphocytes, 1168
Gamma globulins
Colchicine, 1168
Haptens, 1134
B-Lymphocytes
Gamma globulins, 1134
T-Lymphocytes
Gamma globulins, 1134

**Immunity, cellular**
Anemia, aplastic
Histocompatibility antigens, 545
Cyclophosphamide
Cell transformation, viral, 774
Haptens, 290
Histocompatibility antigens, 290
T-Lymphocytes, 774
Cytochrome C
Freund's adjuvant, 758
Hypersensitivity, delayed, 758
Erythrocytes
Transplantation, allogeneic, 1042
Gamma globulins
Antigen administration route, 758
Freund's adjuvant, 758

**Immunity, cellular (cont'd)**
Hemagglutinins, viral
Histocompatibility antigens, 856
Histocompatibility antigens
Hybrid mouse, 724
B-Lymphocytes, 485
T-Lymphocytes
Aging, 1029
*Bordetella pertussis*, 1393
Cardiac allograft, rat, 1042
Glycoproteins, 473
Growth substances, 1460
Histocompatibility antigens, 114, 485, 724 910, 1379
Mouse, nude, 1460
Radiation chimera, 535
Thymus-reconstituted nude mice, 398
Trinitrobenzenes, 1379, 1407
Lymphoma
Antigens, neoplasm, 745
Antigens, theta, 732
Immunization, 732
Peritoneal cells, 745
Monocytes
Histocompatibility antigens, 485
Radiation chimera
Virus, ectromelia, 535
Virus, influenza
Histocompatibility antigens, 565
Virus, influenza type A
Hemagglutinins, viral, 856
Virus, murine leukemia
Aging, 358
Killer cells, 358
Virus, radiation leukemia
Histocompatibility antigens, 898
Virus, Rauscher murine leukemia
Killer cells, 358
Virus, SV40
Cyclophosphamide, 774
Histocompatibility antigens, 774
Virus, vaccinia
T-Lymphocytes, 150

**Immunity, passive**
T-Lymphocytes
Hypersensitivity, delayed, 1197

**Immunization**
*Bacillus Calmette-Guerin*
Phagocytosis, 1056
T-Lymphocytes
Graft survival, 1042
Transplantation, allogeneic, 1042
Lymphoma
Antibody-dependent cell cytotoxicity, 732
Immunity, cellular, 732
Tumor dormancy, 732
Myeloma proteins
Anti-antibodies, 815
*Streptococcus agalactiae*
Antigen-antibody reactions, 327
Opsonins, 327
Virus, SV40
Cyclophosphamide, 774

**Immunization (cont'd)**
Histocompatibility antigens, 774

**Immunogenetics**
T-Lymphocytes
Haptens, 1336

**Immunoglobulins**
B-Lymphocytes
Lymphocyte cooperation, 1543
Lymphocyte culture test, mixed, 1543
Plasma cells, 1543
T-Lymphocytes
Concanavalin A, 632
Histocompatibility antigens, 1537
Lymphocyte cooperation, 1543
Lymphoid tissue, 632
Lymphoid tissue
Lipopolysaccharides, 632
*Plasmodium berghei*
Staphylococcal protein A, 1288

**Immunoglobulins, Fc**
Blood platelets
Cell differentiation, 1273
Receptors, 1273
Megakaryocytes
Receptors, 1273

**Immunoglobulins, heavy chain**
Dextran
Antibody formation, 1265
DNA
Germ-line minigenes, 1299
Somatic assembly, 1299
Gene variable region
Amino acid sequence, 1299
Complementarity-determining segments, 1299
Framework segments, 1299
Hypersensitivity, delayed
Gene variable region, 1336
Histocompatibility antigens, 1336
Polysaccharides, bacterial
Antibody formation, 1227
Serum albumin, bovine
Hypersensitivity, delayed, 1336

**Immunoglobulins, light chain**
DNA
Germ-line minigenes, 1299
Somatic assembly, 1299
Gene variable region
Amino acid sequence, 1299
Complementarity-determining segments, 1299
Framework segments, 1299
Genetic markers
Isoelectric focusing, 1477
Serum, mouse, 1477
Isoantigens
Gene linkage, 1477
Myeloma proteins
Idiotype suppressor cells, 592

**Immunoglobulins, surface**
Lupus erythematosus, systemic
B-Lymphocytes, 516
B-Lymphocytes

**Immunoglobulins, surface (cont'd)**
Age factors, rat, 416
Cap formation, 416
Cell differentiation, 553
Colchicine, 416
IgM, 553
Lipopolysaccharides, 553
Lipoproteins, 553
Mitogens, 553
Shedding, endocytosis, 416
Spleen, mouse, 553

**Immunologic deficiency syndromes**
Antibody formation
Lymphocyte cooperation, 267
T-Lymphocytes, 267
Antigens, bacterial
Antigen-antibody reactions, 993
Lipopolysaccharides
Antigen-antibody reactions, 993
B-Lymphocytes
Antigens, bacterial, 993
IgG, 993
IgM, 993
Lipopolysaccharides, 993
Mouse, 267
Mouse, hairless, 228
X Chromosome, 267
X-linked defect, mouse, 993
T-Lymphocytes
Isoantigens, 228
Mouse, hairless, 228
Myeloma proteins
Antibody formation, 267
Phosphorylcholine
Antibody formation, 267

**Immunologic techniques**
Cytochrome C
Lymphocytes, 758
Gamma globulins
Lymphocytes, 758

**Immunosorbent techniques**
T-Lymphocytes
Isoantigens, 613

**Immunosuppression**
Allergens
Ragweed pollen, 424
Cytochrome C
T-Lymphocytes, 758
Gamma globulins
T-Lymphocytes, 758
Histocompatibility antigens
Antigenic determinants, 114
T-Lymphocytes
Anti-antibodies, 613
Hypersensitivity, delayed, 1018, 1197
Isoantigens, 613
Leukocyte culture test, mixed, 114
Thymus gland
Transplantation, homologous, 398

**Indomethacin**
Leukocytes

**Indomethacin (cont'd)**
Osteolysis, 279

**Interferon**
Virus, influenza
Immune response, mouse, 601
Macrophages, 601

**Iodide**
Peroxidases
Ovum, 938

**Ionophore A23187**
Estradiol
Sea urchin eggs, 938
Hydrogen peroxide
Sea urchin eggs, 938
Myeloperoxidase
Sea urchin eggs, 938
Thyroxine
Sea urchin eggs, 938

**Isoantigens**
Autoantibodies
Glycosphingolipids, 975
Blood platelets
Cell differentiation, 1273
Cell membrane
Genes, immune response, 981
$\alpha,\beta$ Chains
Genes, immune response, 981
Dendrites
Spleen, 1
Galactose
Antigenic determinants, 975
Glycosphingolipids
Antibody specificity, 975
Histocompatibility antigens
Cell membrane, 981
Immunoglobulins, light chain
Gene linkage, 1477
Immunologic deficiency syndromes
T-Lymphocytes, 228
Lupus erythematosus, systemic
T-Lymphocytes, 516
B-Lymphocytes
Antigen-antibody reactions, 495
Cell differentiation, 495
T-Lymphocytes
Cell differentiation, 1460
Growth substances, 1460
Immunosorbent techniques, 613
Immunosuppression, 613
Mouse, hairless, 228
Malaria
Cell adhesion, 172
Megakaryocytes
Cell differentiation, 1273
Peptides
$\alpha,\beta$ Chains, 981

K

**Kallikrein**
Kinins
Bovine plasma, 847

**Kidney**
Histocompatibility antigens
Transplantation, allogeneic, 244

**Kidney glomerulus**
Basal lamina
Capillary tufts, 1450
Guanidine technique study, 1450
Ultrastructural study, 1450
Diabetic nephropathies
Basement membrane, 623
Streptozotocin, 623

**Killer cells**
Anemia, aplastic
Histocompatibility antigens, 545
Leukemia, radiation-induced
Lymphocytes, 1260
Transplantation immunology, 1260
T-Lymphocytes
Anti-antibodies, 910
Histocompatibility antigens, 545
Idiotypic determinants, 910
Lymphoma
Lymphocytes, 1260
Transplantation immunology, 1260
Virus, Moloney murine sarcoma
T-Lymphocytes, 1531
Virus, murine leukemia
Immunity, cellular, 358
Lymphocytes, 358
Virus, radiation leukemia
T-Lymphocytes, 898
Virus, Rauscher murine leukemia
Immunity, cellular, 358
Virus, RNA tumor
Spleen cell cytotoxicity, 1117
Transplantation immunology, 1117

**Kininogens**
Bovine plasma
Fitzgerald-trait plasma, 847
Factor XI
Contact activation, 847
Factor XII
Contact activation, 847
Thromboplastin
Fitzgerald-trait plasma, 847

**Kinins**
Kallikrein
Bovine plasma, 847

**Kupffer cells**
Glucan
Cytochemical, ultrastructural study, 883
Liver, rat, 883
Monocytes, 883
Peroxidases, 883
Peroxidases
Endoplasmic reticulum, 883

L

**Lactoperoxidase**
Macrophages

**Lactoperoxidase (cont'd)**
Cytolysis, P388 cells, 100

**Lectins**
*see* Plant agglutinins

**Leukemia**
T-Lymphocytes
Lymphocytotoxicity, 273
Virus, Friend murine leukemia
T-Lymphocytes, 273

**Leukemia L1210**
T-Lymphocytes
*Bordetella pertussis*, 1393
Cytotoxicity, 1393

**Leukemia, lymphocytic**
B-Lymphocytes
Glycoproteins, 1424

**Leukemia, myelocytic**
Cell differentiation
Chemotaxis, 969
Receptors, complement, 969
Superoxide, 969
Cells, cultured
Cell differentiation, 969
Dimethyl sulfoxide
Cell differentiation, 969
Granulocytes, 969

**Leukemia, radiation-induced**
Killer cells
Lymphocytes, 1260
Transplantation immunology, 1260

**Leukocytes**
Indomethacin
Osteolysis, 279
Prostaglandins
Osteolysis, 279

**Leukocytes, polymorphonuclear**
*see* Neutrophils
Benzoic acid, 27
*D*-Mannitol, 27

**Levan**
Myeloma proteins
Anti-antibodies, 815

**Light**
T-Lymphocytes
Lymphocyte cooperation, 1537

**Lipopolysaccharides**
Dendrites
Cell differentiation, 1
Immunologic deficiency syndromes
Antigen-antibody reactions, 993
B-Lymphocytes, 993
B-Lymphocytes
Adjuvant effects, 793
Antigen-antibody reactions, 793
Cell differentiation, 553
Endotoxins, 713
Immunoglobulins, surface, 553
T-Lymphocytes

**Lipopolysaccharides (cont'd)**
Adjuvant effects, 793
Antigen-antibody reactions, 793
Lymphoid tissue
Immunoglobulins, 632
Macrophages
Adjuvant effects, 793

**Lipoproteins**
B-Lymphocytes
Cell differentiation, 553
Immunoglobulins, surface, 553

**Lung**
Macrophages
Alveolar and interstitial tissue, mouse, 1504
Cell division, 1504
Complement 3, 1504
Immune receptors, mouse, 1504
Phagocytosis, 1504
Pinocytosis, 1504
Steady-state kinetics, mouse, 1504

**Lupus erythematosus, systemic**
Glomerulonephritis
Immune complex disease, mouse, 1099
Immune serums
Antigen-antibody complex, 1099
B-Lymphocytes
Complement, 516
Immunoglobulins, surface, 516
Lymphoid tissue, mouse, 516
T-Lymphocytes
Histocompatibility antigens, 516
Isoantigens, 516
Lymphoid tissue, mouse, 516
Virus, murine leukemia
Antigen-antibody complex, 1099

**Lymphocyte cooperation**
*Bordetella pertussis*
Cell differentiation, 1001
Chimera
Genetic restriction, 686
Histocompatibility antigens, 686
Histocompatibility antigens
Thymic chimera, 1360
Immunologic deficiency syndromes
Antibody formation, 267
B-Lymphocytes
Antibody formation, 808
*Bordetella pertussis*, 1001
Ethanol, 2-mercapto-, 644
Histocompatibility antigens, 1208, 1360
IgD, 987
IgG, 1360
Immunoglobulins, 1543
Proliferation factor, 644
Thymic chimera, 1360
T-Lymphocytes
Antibody formation, 808
Antigen-antibody reactions, 1208, 1543
Antigenic determinants, 1208
Cell differentiation, 1001, 1360
Ethanol, 2-mercapto-, 644
Genetic restriction, 686

**Lymphocyte cooperation (cont'd)**
Helper cells, 808
Histocompatibility antigens, 780, 808, 1208 1360, 1537
IgA, 632
IgD, 987
IgG, 1360
Immunoglobulins, 1543
Light, 1537
B-Lymphocytes, 808, 1360
Macrophages, 686
Proliferation factor, 644
Thymic chimera, 1360
Tonsil, 1543
Uridine, 5-bromo-2′-deoxy-, 1537
Macrophages
Genetic restriction, 686
Radiation chimera
Antigen-antibody reactions, 780
Genetic restriction, 686
Histocompatibility antigens, 686
B-Lymphocytes, 387
T-Lymphocytes, 387, 780
Macrophages, 686
Radiation, ionizing
T-Lymphocytes, 1360

**Lymphocyte depletion**
T-Lymphocytes
Transplantation, allogeneic, 1042
Myeloma proteins
T-Lymphocytes, 592

**Lymphocyte transformation**
Arachidonic acid
Phospholipase, 1487
B-Lymphocytes
Ethanol, 2-mercapto-, 644
T-Lymphocytes
Ethanol, 2-mercapto-, 644
*Streptococcus pyogenes*
Mitogens, 1438

**Lymphocytes**
Arachidonic acid
Fatty acids, 1487
Radioactivity release, 1487
Blood proteins
Arachidonic acid, 1487
Calcium
Arachidonic acid, 1487
Cytochrome C
Immunologic techniques, 758
Gamma globulins
Immunologic techniques, 758
IgE
Antibody formation, 539
Leukemia, radiation-induced
Killer cells, 1260
Lymphoma
Killer cells, 1260
Phosphatidylinositols
Arachidonic acid, 1487
Fatty acids, 1487
Phospholipase

**Lymphocytes (cont'd)**
Arachidonic acid, 1487
Plant agglutinins
Arachidonic acid, 1487
Fatty acids, 1487
Virus, murine leukemia
Antigens, viral, 1183
Killer cells, 358

**B-Lymphocytes**
Antibody formation
Lymphocyte cooperation, 808
Thymus-reconstituted nude mice, 398
Antigen-antibody reactions
X-linked defect, mouse, 993
*Bordetella pertussis*
Lymphocyte cooperation, 1001
Cell differentiation
Immunoglobulins, surface, 553
Colchicine
Immune tolerance, 1168
Endotoxins
Antibody formation, 713
Lymphocyte proliferation, 713
Polyclonal activation, 713
Erythrocytes
Rosette formation, 1349
*Escherichia coli*
Endotoxins, 713
Ethanol, 2-mercapto-
Lymphocyte cooperation, 644
Lymphocyte transformation, 644
Gamma globulins
Colchicine, 1168
Immune tolerance, 1134
Tolerance induction, *in utero*, 1134
Genes, immune response
Rosette formation, 1349
Glycoproteins
Antigenic determinants, 1424
Cell membrane, 1424
Immunoprecipitation, 1424
Isolation and immunological characterization 1424
Histocompatibility antigens
Antigenic determinants, 1208
Graft *vs* host reaction, 234
Immune response genes, 780
Immunity, cellular, 485
Isolation and characterization, DR antigens 658
Lymphocyte cooperation, 1208
Rosette formation, 1349
IgD
Antigen-antibody reactions, 987
Haptens, 987
Lymphocyte cooperation, 987
IgG
Lymphocyte cooperation, 1360
IgM
Antigen-antibody reactions, 987
Immunoglobulins
Lymphocyte cooperation, 1543
Lymphocyte culture test, mixed, 1543

**B-Lymphocytes (cont'd)**
Plasma cells, 1543
Immunoglobulins, surface
Age factors, rat, 416
Cap formation, 416
Colchicine, 416
IgM, 553
Shedding, endocytosis, 416
Spleen, mouse, 553
Immunologic deficiency syndromes
Antigens, bacterial, 993
IgG, 993
IgM, 993
Lipopolysaccharides, 993
Mouse, 267
Mouse, hairless, 228
X Chromosome, 267
X-linked defect, mouse, 993
Isoantigens
Antigen-antibody reactions, 495
Cell differentiation, 495
Leukemia, lymphocytic
Glycoproteins, 1424
Lipopolysaccharides
Adjuvant effects, 793
Antigen-antibody reactions, 793
Cell differentiation, 553
Endotoxins, 713
Immunoglobulins, surface, 553
Lipoproteins
Cell differentiation, 553
Immunoglobulins, surface, 553
Lupus erythematosus, systemic
Complement, 516
Immunoglobulins, surface, 516
Lymphoid tissue, mouse, 516
Lymphocyte cooperation
Histocompatibility antigens, 1360
Proliferation factor, 644
Thymic chimera, 1360
T-Lymphocytes
Histocompatibility antigens, 1537
Lymphocyte cooperation, 808, 1360
Lymphoid tissue
Anti-antibodies, 216
Mitogens
Cell differentiation, 553
Fetal calf serum, 553
Hemolytic plaque assay, 553
Immunoglobulins, surface, 553
Nocardia
Mitogens, 553
Peyer's patches
Anti-antibodies, 216
IgA, 216
Radiation chimera
Lymphocyte cooperation, 387
Radiation, ionizing
Cell differentiation, 1360
Tonsil
Glycoproteins, 1424

**T-Lymphocytes**
Aging
Immunity, cellular, 1029
Alanine
Glutamic acid, 613
Anemia, aplastic
Histocompatibility antigens, 545
Anti-antibodies
Idiotype suppression, 1371
Immunosuppression, 613
Killer cells, 910
Antibody formation
Haptens, 267
Antigen-antibody reactions
Histocompatibility antigens, 1208
Lymphocyte cooperation, 1208, 1543
Antigenic determinants
Lymphocyte cooperation, 1208
Antigens
Idiotype suppression, 1371
Antigens, theta
Tissue distribution, 576
Antilymphocyte serum
Anti-antibodies, 1371
*p*-Azobenzenearsonate
Antigen-antibody reactions, 1084
Hypersensitivity, delayed, 1069, 1084
Suppressor factor(s), 1084
Benzene, 1-fluoro-2,4-dinitro-
Hypersensitivity, delayed, 1197
Beta globulins
Cell membrane, 158
Isolation and characterization, 158
*Bordetella pertussis*
Cell differentiation, 1001
Immunity, cellular, 1393
Lymphocytosis promoting factor, 1393
Mitomycin C, 1393
Cell differentiation
Aging, 1029
Cells, cultured, 1460
Glutamic acid, 40
Immune response, mouse, 40
Lymphocyte cooperation, 1001
Cells, cultured
Lymphocytotoxicity, 273
Mouse, nude, 1460
Chimera
Cell differentiation, 686
Colchicine
Immune tolerance, 1168
Concanavalin A
Immunoglobulins, 632
Mitomycin C, 1393
Cyclophosphamide
Histocompatibility antigens, 290
Hypersensitivity, delayed, 1018, 1197, 1336
Immunity, cellular, 774
Spleen cell cytotoxicity, 290
Cytochrome C
Antigenic determinants, 436
Cell differentiation, 436
Cross reactions, 436
Immunosuppression, 758
Erythrocytes

**T-Lymphocytes (cont'd)**
Rosette formation, 1349
Ethanol, 2-mercapto-
Lymphocyte cooperation, 644
Lymphocyte transformation, 644
Fibrosarcoma
Hyaluronidase, 507
Lymphocytotoxicity, 507
Gamma globulins
Colchicine, 1168
Immune tolerance, 1134
Immunosuppression, 758
Tolerance induction, *in utero*, 1134
Genes, immune response
Rosette formation, 1349
Glutamic acid
Immunosuppressive factors, 613
Terpolymer, 40
Glycoproteins
Cell membrane, 473
Immunity, cellular, 473
Immunoprecipitation, 1424
Plant agglutinins, 473
*Vicia villosa*, 473
Graft *vs* host reaction
Immunogenetics, rat, 234
Growth substances
Cell differentiation, 1460
Cells, cultured, 273
Immunity, cellular, 1460
Lymphocyte culture test, mixed, 1460
Haptens
Antigen-antibody reactions, 1208
Gamma globulins, 1336
(4-hydroxy-5-iodo-3-nitrophenyl)acetyl-, 1336
(4-hydroxy-3-nitrophenyl)acetyl-, 1336
Hypersensitivity, delayed, 1069, 1336
Immunogenetics, 1336
Immunologic techniques, 185
Serum albumin, bovine, 1336
Histocompatibility antigens
Antigen-antibody complex, 613
Antigenic determinants, 1208
Cell differentiation, 1537
Graft *vs* host reaction, 137, 234
Hybrid mouse, 724
Hypersensitivity, delayed, 1069, 1084
Immune response genes, 780
Immunity, cellular, 114, 485, 724, 910, 1379
Immunogenetics, rat, 234
Immunoglobulins, 1537
Killer cells, 545
Leukocyte culture test, mixed, 910
Lymphocyte cooperation, 780, 808, 1208 1537
B-Lymphocytes, 1537
Radiation chimera, 40
Rosette formation, 1349
Hypersensitivity, delayed
Age factors, mouse, 1018
Antigenic determinants, 1197
Immunity, passive, 1197
Immunosuppression, 1018, 1197
Suppressor factor(s), 1069, 1084

**T-Lymphocytes (cont'd)**
IgA
Lymphocyte cooperation, 632
IgD
Lymphocyte cooperation, 987
IgG
Lymphocyte cooperation, 1360
Immunity, cellular
Cardiac allograft, rat, 1042
Mouse, nude, 1460
Thymus-reconstituted nude mice, 398
Immunization
Graft survival, 1042
Transplantation, allogeneic, 1042
Immunoglobulins
Lymphocyte cooperation, 1543
Immunologic deficiency syndromes
Antibody formation, 267
Isoantigens, 228
Mouse, hairless, 228
Immunosuppression
Leukocyte culture test, mixed, 114
Isoantigens
Cell differentiation, 1460
Growth substances, 1460
Immunosorbent techniques, 613
Immunosuppression, 613
Mouse, hairless, 228
Killer cells
Idiotypic determinants, 910
Leukemia
Lymphocytotoxicity, 273
Virus, Friend murine leukemia, 273
Leukemia L1210
*Bordetella pertussis*, 1393
Cytotoxicity, 1393
Light
Lymphocyte cooperation, 1537
Lipopolysaccharides
Adjuvant effects, 793
Antigen-antibody reactions, 793
Lupus erythematosus, systemic
Histocompatibility antigens, 516
Isoantigens, 516
Lymphoid tissue, mouse, 516
Lymphocyte cooperation
Antibody formation, 808
Antigen-antibody reactions, 1543
Cell differentiation, 1360
Genetic restriction, 686
Histocompatibility antigens, 1360
Idiotypic determinants, 910
Proliferation factor, 644
Thymic chimera, 1360
Lymphocyte culture test, mixed
Mouse, nude, 1460
B-Lymphocytes
Lymphocyte cooperation, 808, 1360
Lymphoid tissue
Immunoglobulins, 632
Lymphoma
*Bordetella pertussis*, 1393
Cytotoxicity, 1393
Macrophages

**T-Lymphocytes (cont'd)**
Lymphocyte cooperation, 686
Mitogens
*Bordetella pertussis*, 1001
Monocytes
Cell differentiation, 1537
Myeloma proteins
Anti-antibodies, 592, 1371
Idiotype regulation, 815
Idiotype suppressor cells, 592
Lymphocyte depletion, 592
Plaque-forming cell assay, 592
Peptides
Cell differentiation, 436
Peyer's patches
IgA, 632
Phosphorylcholine
Anti-antibodies, 1371
Plant agglutinins
Cell cycle kinetics, 1029
Cell differentiation, 1029
Mitomycin C, 1393
Plasmacytoma
Histocompatibility antigens, 185
Lymphocytotoxicity, 185
Trinitrobenzenes, 185
Radiation chimera
Antigen-antibody reactions, 780
Cell differentiation, 686
Histocompatibility antigens, 387, 535, 780
Immunity, cellular, 535
Lymphocyte cooperation, 387, 780
Virus, ectromelia, 535
Virus, Sindbis, 786
Radiation, ionizing
Lymphocyte cooperation, 1360
Sarcoma
Virus, Moloney murine sarcoma, 1531
Sarcoma, mast cell
*Bordetella pertussis*, 1393
Cytotoxicity, 1393
Thymus Gland
Cell differentiation, 686
Tonsil
Lymphocyte cooperation, 1543
Transplantation, allogeneic
Antibody formation, 1042
Graft survival, 1042
Lymphocyte depletion, 1042
Trinitrobenzenes
Cytotoxicity, 1379, 1407
Genes, immune response, 1379, 1407
Histocompatibility antigens, 1379, 1407
Immunity, cellular, 1379, 1407
Killer cells, 185
Uridine, 5-bromo-2'-deoxy-
Cell cycle kinetics, 1029
Lymphocyte cooperation, 1537
*Vicia villosa*
Binding, 473
Leukocyte culture test, mixed, 473
Virus, influenza
*in vitro* cytotoxicity, 565
Histocompatibility antigens, 565

**T-Lymphocytes (cont'd)**
Virus, influenza type A
Hemagglutinins, viral, 856
Virus, Moloney murine sarcoma
Histocompatibility antigens, 1531
Killer cells, 1531
Lymphocyte culture test, mixed, 1531
Virus, pox
Immune response, 724
Macrophage cytotoxicity, 724
Virus, radiation leukemia
Histocompatibility antigens, 898
Killer cells, 898
Virus, Sindbis
Histocompatibility antigens, 786
Immune response, mouse, 786
Virus, SV40
Cell transformation, viral, 774
Virus, vaccinia
Histocompatibility antigens, 150
Immunity, cellular, 150

**Lymphoid tissue**
Antigens, bacterial
Anti-antibodies, 216
Lipopolysaccharides
Immunoglobulins, 632
B-Lymphocytes
Anti-antibodies, 216
T-Lymphocytes
Immunoglobulins, 632

**Lymphoma**
Antigens, neoplasm
Immunity, cellular, 745
Tumor dormancy, 745
Antigens, theta
Immunity, cellular, 732
Antigens, viral
Antigenic determinants, 1152
Cholanthrene, 3-methyl-
Transplantation immunology, 732, 745
Granulocytes
Cytolysis, P388 cells, 84, 100
Phorbol myristate acetate, 100
Hydrogen peroxide
Cytolysis, P388 cells, 100
Immune serums
Cytophilic antibody, 732
Peritoneal cells, 732
Immunity, cellular
Peritoneal cells, 745
Immunization
Antibody-dependent cell cytotoxicity, 732
Immunity, cellular, 732
Tumor dormancy, 732
Killer cells
Lymphocytes, 1260
Transplantation immunology, 1260
T-Lymphocytes
*Bordetella pertussis*, 1393
Cytotoxicity, 1393
Macrophages
*Bacillus Calmette-Guerin*, 100
Cytolysis, P388 cells, 84, 100

**Lymphoma (cont'd)**
Peritoneal cells
Tumor dormancy, 745
Phorbol myristate acetate
Hydrogen peroxide, 84
Transplantation immunology
Tumor dormancy, 732
Tumor dormancy
Immune response, 745
Virus, Friend murine spleen focus-forming
Antigens, viral, 1152
Virus, Moloney murine leukemia
Transplantation immunology, 1260

**Lysine**
Allergens
Conjugates, immunologic properties, 424
Ragweed pollen, 424

**Lysozyme**
*see* Muramidase

**M**

**Macrophages**
*Bacillus Calmette-Guerin*
Cytolysis, P388 cells, 84
Bone marrow
Peroxidases, 17
Ultrastructural study, mouse, 17
Casein
Cytolysis, P388 cells, 84
Complement 3
Immune receptors, mouse, 1504
*Corynebacterium parvum*
Cytolysis, P388 cells, 84
Cytolysis, P388 cells
Phorbol myristate acetate, 84
Glucosidases
Hydrogen peroxide, 1056
Histocompatibility antigens
Immune response genes, 780
Hydrogen peroxide
Phagocytosis, 1056
Lactoperoxidase
Cytolysis, P388 cells, 100
Lipopolysaccharides
Adjuvant effects, 793
Lung
Alveolar and interstitial tissue, mouse, 1504
Cell division, 1504
Complement 3, 1504
Immune receptors, mouse, 1504
Phagocytosis, 1504
Pinocytosis, 1504
Steady-state kinetics, mouse, 1504
Lymphocyte cooperation
Genetic restriction, 686
T-Lymphocytes
Lymphocyte cooperation, 686
Lymphoma
*Bacillus Calmette-Guerin*, 100
Cytolysis, P388 cells, 84, 100
Malaria
Spleen, 1288

**Macrophages (cont'd)**
Monocytes
Cell division, 1504
Myeloperoxidase
Cytolysis, P388 cells, 100
Phorbol myristate acetate
Hydrogen peroxide, 84, 1056
*Plasmodium berghei*
Spleen, 1288
Properdin
Complement-dependent spreading, 372
Enzyme activation, 372
Factor B, 372
Movement, 372
Radiation chimera
Lymphocyte cooperation, 686
Radiation, ionizing
Cell division, 1504
Spleen cell factor(s)
*in vivo, in vitro* activation, 1056
*Trypanosoma cruzi*
Phagocytosis, 1056
Virus, influenza
Immune response, mouse, 601
Interferon, 601

**Malaria**
Cytochalasin B
Cell adhesion, 172
Merozoites, 172
Erythrocytes
Merozoites, 172
Isoantigens
Cell adhesion, 172
Macrophages
Spleen, 1288
Phagocytosis
Immune response, mouse, 1288
*Plasmodium berghei*
Antigen-antibody complex, 1288
Immune response, mouse, 1288
Phagocytosis, 1288

**Mammary neoplasms, experimental**
Hyaluronidase
Lymphocytotoxicity, 507
Surface properties
Immune response, 507

***D*-Mannitol**
Neutrophils
Bacteriolysis, 27

**Megakaryocytes**
Blood platelets
Glycoproteins, 1273
Myosin, 1273
Bone marrow
Factor VII, 1273
Fibrinogen, 1273
Myosin, 1273
Cell membrane
Platelet-associated components, 1273
Complement
Cell differentiation, 1273
Receptors, 1273

**Megakaryocytes (cont'd)**
Cytoplasm
Platelet-associated components, 1273
IgG
Cell differentiation, 1273
Receptors, 1273
Immunoglobulins, Fc
Receptors, 1273
Isoantigens
Cell differentiation, 1273

**Melanoma**
Histocompatibility antigens
Antigen-antibody reactions, 658
$\beta$-chain structure, 658
Indirect rosette microassay, 658
Isolation and characterization, DR antigens 658

**Membranes**
*see also* Cell membrane
Fertilization
Peroxidases, 938
Peroxidases
Sea urchin eggs, 938

**Methoxy polyethylene glycol**
Allergens
Conjugates, immunologic properties, 424
Ragweed pollen, 424

**Mitogens**
B-Lymphocytes
Cell differentiation, 553
Fetal calf serum, 553
Hemolytic plaque assay, 553
Immunoglobulins, surface, 553
Nocardia, 553
T-Lymphocytes
*Bordetella pertussis*, 1001
*Streptococcus pyogenes*
Antigens, 1438
Extracellular product, 1438
Isolation and characterization, 1438
Lymphocyte transformation, 1438

**Mitomycin C**
T-Lymphocytes
*Bordetella pertussis*, 1393
Concanavalin A, 1393
Plant agglutinins, 1393

**Monocytes**
Bone marrow
Antigen-antibody complex, 127
Peroxidases, 17
Ultrastructural study, mouse, 17
Chymostatin
Plasminogen activators, 954
Cortisol acetate
Influx, lung, mouse, 1504
Glomerulonephritis
Antigen-antibody complex, 127
Glucan
Kupffer cells, 883
Histocompatibility antigens
Immunity, cellular, 485

**Monocytes (cont'd)**
Immune complex
Plasminogen activators, 954
T-Lymphocytes
Cell differentiation, 1537
Macrophages
Cell division, 1504
Pancreatopeptidase
Fibrinolysis, 954
Peptide hydrolases
Plasminogen activators, 954

**Monocytopenia**
Cortisol acetate
Influx, lung, mouse, 1504

**Muramidase**
*Escherichia coli*
Bacteriolysis, 870
*Streptomyces albus*
Polysaccharides, bacterial, 58

**Muscle, smooth**
Raynaud's disease
Morphologic study, 1326
Scleroderma, systemic
Morphologic study, 1326

**Myeloma proteins**
Anti-antibodies
Idiotype regulation, 815
Immune response, mouse, 1371
Immunization
Anti-antibodies, 815
Immunoglobulins, light chain
Idiotype suppressor cells, 592
Immunologic deficiency syndromes
Antibody formation, 267
Levan
Anti-antibodies, 815
T-Lymphocytes
Anti-antibodies, 592, 1371
Idiotype regulation, 815
Idiotype suppressor cells, 592
Lymphocyte depletion, 592
Plaque-forming cell assay, 592
Trinitrobenzenes
Anti-antibodies, 592, 815

**Myeloperoxidase**
Ionophore A23187
Sea urchin eggs, 938
Macrophages
Cytolysis, P388 cells, 100
Neutrophils
Bacteriolysis, 27

**Myosin**
Megakaryocytes
Blood platelets, 1273
Bone marrow, 1273

**N**

**Neoplasm metastasis**
Virus, vesicular stomatitis
Transplantation immunology, 1117

**Neuraminidase**
*Escherichia coli*
Polysaccharides, bacterial, 669

**Neutrophils**
Bacteriolysis
Benzoic acid, 27
*D*-Mannitol, 27
Myeloperoxidase, 27
Singlet oxygen, 27
Superoxide dismutase, 27
Xanthine oxidase, 27
Furan, 2,5-diphenyl-
Xanthine oxidase, 27
Proteins
Cells, cultured, 284
RNA replication
Cells, cultured, 284
Concanavalin A, 284
Glucocorticoids, 284
*Sarcina lutea*
Bacteriolysis, 27
*Staphylococcus aureus*
Bacteriolysis, 27

**Nocardia**
B-Lymphocytes
Mitogens, 553

**O**

**Opsonins**
*Streptococcus agalactiae*
Immunization, 327

**Osteolysis**
Indomethacin
Leukocytes, 279
Prostaglandins
Leukocytes, 279
Plant agglutinins, 279

**Ovum**
Estradiol
Peroxidases, 938
Hydrogen peroxide
Degradation, 938
Iodide
Peroxidases, 938
Peroxidases
Phagocytosis, 938
Thyroxine
Degradation, 938
Peroxidases, 938

**P**

**Pancreatopeptidase**
Monocytes
Fibrinolysis, 954

**Peptide hydrolases**
Monocytes
Plasminogen activators, 954

**Peptides**
Isoantigens

**Peptides (cont'd)**
$\alpha,\beta$ Chains, 981
T-Lymphocytes
Cell differentiation, 436

**Peroxidases**
Estradiol
Ovum, 938
Fertilization
Membranes, 938
Sea urchin eggs, 938
Glucan
Kupffer cells, 883
Iodide
Ovum, 938
Kupffer cells
Endoplasmic reticulum, 883
Macrophages
Bone marrow, 17
Membranes
Sea urchin eggs, 938
Monocytes
Bone marrow, 17
Phagocytes
Bone marrow, 17
Cells, cultured, 17
Phagocytosis
Ovum, 938
Thyroxine
Ovum, 938

**Peyer's patches**
Antigens, bacterial
Anti-antibodies, 216
B-Lymphocytes
Anti-antibodies, 216
IgA, 216
T-Lymphocytes
IgA, 632
Phosphorylcholine
Antigens, bacterial, 216

**Phagocytes**
Bone marrow
Peroxidases, 17
Ultrastructural study, mouse, 17
Peroxidases
Cells, cultured, 17

**Phagocytosis**
*Bacillus Calmette-Guerin*
Immunization, 1056
Glomerulonephritis
Antigen-antibody complex, 127
Macrophages
Hydrogen peroxide, 1056
Lung, 1504
*Trypanosoma cruzi*, 1056
Malaria
Immune response, mouse, 1288
*Plasmodium berghei*, 1288
Peroxidases
Ovum, 938
*Plasmodium berghei*
Erythrocytes, 1288
Immune serums, 1288

**Phagocytosis (cont'd)**
Malaria, 1288
Reticulocytes, 1288
Staphylococcal protein A, 1288
*Trypanosoma cruzi*
*Bacillus Calmette-Guerin*, 1056

**Phorbol myristate acetate**
Granulocytes
Cytolysis, P388 cells, 84
Hydrogen peroxide, 84
Lymphoma
Granulocytes, 100
Hydrogen peroxide, 84
Macrophages
Cytolysis, P388 cells, 84
Hydrogen peroxide, 84, 1056

**Phosphatidylinositols**
Lymphocytes
Arachidonic acid, 1487
Fatty acids, 1487

**Phospholipase**
Arachidonic acid
Lymphocyte transformation, 1487
Lymphocytes
Arachidonic acid, 1487

**Phospholipids**
Complement
Membrane attack complex, 448
*Escherichia coli*
Bacteriolysis, 870

**Phosphorylcholine**
Antigens
Immune response, mouse, 1371
Immunologic deficiency syndromes
Antibody formation, 267
T-Lymphocytes
Anti-antibodies, 1371
Peyer's patches
Antigens, bacterial, 216

**Phytohemagglutinins**
*see* Plant agglutinins

**Pinocytosis**
Macrophages
Lung, 1504

**Plant agglutinins**
Lymphocytes
Arachidonic acid, 1487
Fatty acids, 1487
T-Lymphocytes
Cell cycle kinetics, 1029
Cell differentiation, 1029
Glycoproteins, 473
Mitomycin C, 1393
Prostaglandins
Osteolysis, 279

**Plasma cells**
B-Lymphocytes
Immunoglobulins, 1543

**Plasma proteins**
*see* Blood proteins

**Plasmacytoma**
Histocompatibility antigens
T-Lymphocytes, 185
T-Lymphocytes
Lymphocytotoxicity, 185
Trinitrobenzenes
Immunologic techniques, 185
Killer cells, 185
T-Lymphocytes, 185

**Plasminogen activators**
Monocytes
Chymostatin, 954
Immune complex, 954
Peptide hydrolases, 954

***Plasmodium berghei***
Erythrocytes
Phagocytosis, 1288
Forssman antigen
Antigen-antibody reactions, 1288
Immune serums
Antigen-antibody complex, 1288
Phagocytosis, 1288
Macrophages
Spleen, 1288
Malaria
Antigen-antibody complex, 1288
Immune response, mouse, 1288
Phagocytosis, 1288
Reticulocytes
Phagocytosis, 1288
Staphylococcal protein A
Immunoglobulins, 1288
Phagocytosis, 1288

**Pneumococcus**
*see* *Streptococcus pneumoniae*

**Polycythemia**
Virus, Friend murine spleen focus-forming
Virus, helper, 340

**Polysaccharides**
*Streptococcus agalactiae*
Antigens, bacterial, 327
*Streptococcus pyogenes*
Antibody specificity, 923

**Polysaccharides, bacterial**
Antibody formation
Immunoglobulins, heavy chain, 1227
Spleen, mouse, 1227
*Escherichia coli*
*O*-acetylation, 669
Antigen-antibody reactions, 669
Form variants, K1 antigen, 669
Neuraminidase, 669
*Streptococcus agalactiae*
Antigen-antibody reactions, 58
Antigenic determinants, 58
Isolation and characterization, 58
*Streptococcus pneumoniae*
Antibody formation, 1227

**Polysaccharides, bacterial (cont'd)**
*Streptomyces albus*
Muramidase, 58

**Precancerous conditions**
Erythroleukemia
Virus, Friend murine spleen focus-forming, 340
Virus, Friend murine spleen focus-forming
Immune response, 340

**Pregnanes**
Aminolevulinic acid synthetase
Erythropoiesis, 1314
Androstanes
Uroporphyrinogen I synthetase, 1314
Erythrocytes
Burst formation, 1314
Colony formation, 1314
Erythropoiesis
Bone marrow, 1314
Structure-activity relationship, 1314
Erythropoietin
Cell differentiation, 1314
Uroporphyrinogen I synthetase
Erythropoiesis, 1314

**Properdin**
Macrophages
Complement-dependent spreading, 372
Enzyme activation, 372
Factor B, 372
Movement, 372

**Prostaglandins**
Leukocytes
Osteolysis, 279
Plant agglutinins
Osteolysis, 279

**Proteases**
*see* Peptide hydrolases

**Proteins**
Neutrophils
Cells, cultured, 284

R

**Radiation chimera**
Histocompatibility antigens
Immune response genes, 780
Immune response, mouse, 40
Lymphocyte cooperation
Antigen-antibody reactions, 780
Genetic restriction, 686
Histocompatibility antigens, 686
B-Lymphocytes
Lymphocyte cooperation, 387
T-Lymphocytes
Antigen-antibody reactions, 780
Cell differentiation, 686
Histocompatibility antigens, 40, 387, 535 780
Immunity, cellular, 535
Lymphocyte cooperation, 387, 780
Macrophages
Lymphocyte cooperation, 686

**Radiation chimera (cont'd)**
Virus, ectromelia
Immunity, cellular, 535
T-Lymphocytes, 535
Virus, Sindbis
Histocompatibility antigens, 786
T-Lymphocytes, 786

**Radiation, ionizing**
Histocompatibility antigens
Graft *vs* host reaction, 137
IgE
Antibody formation, 539
B-Lymphocytes
Cell differentiation, 1360
T-Lymphocytes
Lymphocyte cooperation, 1360
Macrophages
Cell division, 1504
Thyroid gland
Transplantation, allogeneic, 1254
Virus, Friend murine spleen focus-forming
Immune response, 837
Virus, vaccinia
Histocompatibility antigens, 150

**Raynaud's disease**
Endothelium
Cell division, 1326
Morphologic study, 1326
Immune serums
Cytotoxic activity, 1326
Endothelium, 1326
Thymidine incorporation, 1326
Muscle, smooth
Morphologic study, 1326

**Receptors, hormone**
Estradiol
Sea urchin eggs, 938

**Reticulocytes**
*Plasmodium berghei*
Phagocytosis, 1288

**RNA replication**
Neutrophils
Cells, cultured, 284
Concanavalin A, 284
Glucocorticoids, 284

S

***Sarcina lutea***
Neutrophils
Bacteriolysis, 27

**Sarcoma**
Virus, Moloney murine sarcoma
Lymphocyte culture test, mixed, 1531
T-Lymphocytes, 1531

**Sarcoma, mast cell**
T-Lymphocytes
*Bordetella pertussis*, 1393
Cytotoxicity, 1393

**Scleroderma, systemic**
Endothelium
Cell division, 1326
Factor VIII, 1326
Morphologic study, 1326
Fibroblasts
Morphologic study, 1326
Immune serums
Cytotoxic activity, 1326
Endothelium, 1326
Thymidine incorporation, 1326
Muscle, smooth
Morphologic study, 1326

**Serum albumin**
Cyclophosphamide
Hypersensitivity, delayed, 1018

**Serum albumin, bovine**
Hypersensitivity, delayed
Immunoglobulins, heavy chain, 1336
T-Lymphocytes
Haptens, 1336

**Spleen**
Dendrites
Cell adhesion, 1
Histocompatibility antigens, 1
Isoantigens, 1
Isolation and characterization, mouse, 1
Ultrastructural study, mouse, 1
Malaria
Macrophages, 1288
*Plasmodium berghei*
Macrophages, 1288

**Staphylococcal protein A**
*Plasmodium berghei*
Immunoglobulins, 1288
Phagocytosis, 1288

***Staphylococcus aureus***
Neutrophils
Bacteriolysis, 27

**Steroids**
Cell differentiation
Structure-activity relationship, 1314
Erythrocytes
Cell differentiation, 1314

***Streptococcus agalactiae***
Antigen-antibody reactions
Antigenic determinants, 327
Immune serums, 327
Antigens, bacterial
Antigen-antibody reactions, 327
Vaccines, 327
Immunization
Antigen-antibody reactions, 327
Opsonins, 327
Polysaccharides
Antigens, bacterial, 327
Polysaccharides, bacterial
Antigen-antibody reactions, 58
Antigenic determinants, 58
Isolation and characterization, 58

**Streptococcus group A**
*see Streptococcus pyogenes*

**Streptococcus group B**
*see Streptococcus agalactiae*

***Streptococcus pneumoniae***
DNA
[Land-mark 1944 article], 297
Transforming factor, 297
Polysaccharides, bacterial
Antibody formation, 1227

***Streptococcus pyogenes***
Antigens
Antigen-antibody reactions, 1438
Mitogens, 1438
Antigens, bacterial
Isolation and characterization, 459
Glomerulonephritis
Antigens, bacterial, 459
Hyaluronidase
Anti-antibodies, 73
Antigenic determinants, 73
Enzymatic activity, 73
IgG
Antibody specificity, 923
Antigen-antibody reactions, 923
Immune serums
Antigen-antibody reactions, 923
IgG, 923
Mitogens
Extracellular product, 1438
Isolation and characterization, 1438
Lymphocyte transformation, 1438
Polysaccharides
Antibody specificity, 923

***Streptomyces albus***
Muramidase
Polysaccharides, bacterial, 58

**Streptozotocin**
Diabetic nephropathies
Animal model, rat, 623
Basement membrane, 623
Kidney glomerulus, 623

**Structure-activity relationship**
Androstanes
Erythropoiesis, 1314
Pregnanes
Erythropoiesis, 1314
Steroids
Cell differentiation, 1314

**Superoxide**
Leukemia, myelocytic
Cell differentiation, 969

**Superoxide dismutase**
Neutrophils
Bacteriolysis, 27

**Surface properties**
Adenocarcinoma
Immune response, 507
Fibrosarcoma

**Surface properties (cont'd)**
Immune response, 507
Mammary neoplasms, experimental
Immune response, 507

T

**Thioglycolate**
*see* Acetic acid, mercapto-

**Thromboplastin**
Kininogens
Fitzgerald-trait plasma, 847

**Thymectomy**
Cyclophosphamide
Hypersensitivity, delayed, 1018

**Thymus gland**
Antigens, theta
Tissue distribution, 576
T-Lymphocytes
Cell differentiation, 686
Transplantation, homologous
Immunosuppression, 398
Mouse, nude, 398
Virus, vaccinia
Histocompatibility antigens, 150

**Thyroid gland**
Histocompatibility antigens
Graft rejection, 1254
Transplantation, allogeneic
Cyclophosphamide, 1254
Graft rejection, 1254
Histocompatibility antigens, 1254
Radiation, ionizing, 1254

**Thyroxine**
Ionophore A23187
Sea urchin eggs, 938
Ovum
Degradation, 938
Peroxidases
Ovum, 938

**Tonsil**
B-Lymphocytes
Glycoproteins, 1424
T-Lymphocytes
Lymphocyte cooperation, 1543

**Transplantation, allogeneic**
Erythrocytes
Immunity, cellular, 1042
Histocompatibility antigens
Immune response, rat, 244
Kidney, 244
T-Lymphocytes
Antibody formation, 1042
Graft survival, 1042
Immunization, 1042
Lymphocyte depletion, 1042
Thyroid gland
Cyclophosphamide, 1254
Graft rejection, 1254
Histocompatibility antigens, 1254

**Transplantation, allogeneic (cont'd)**
Radiation, ionizing, 1254

**Transplantation, homologous**
Glomerulonephritis
Bone marrow, 127
Thymus gland
Immunosuppression, 398
Mouse, nude, 398
Virus, Friend murine spleen focus-forming
Hematopoietic stem cells, 340

**Transplantation immunology**
HeLa cells
Virus, RNA tumor, 1117
Leukemia, radiation-induced
Killer cells, 1260
Lymphoma
Cholanthrene, 3-methyl-, 732, 745
Killer cells, 1260
Tumor dormancy, 732
Virus, Moloney murine leukemia, 1260
Neoplasm metastasis
Virus, vesicular stomatitis, 1117
Virus, influenza
HeLa cells, 1117
Virus, measles
HeLa cells, 1117
Virus, mumps
HeLa cells, 1117
Virus, RNA tumor
BHK cells, 1117
Killer cells, 1117
Mouse, nude, 1117
Virus, vesicular stomatitis
HeLa cells, 1117

**Trinitrobenzenes**
T-Lymphocytes
Cytotoxicity, 1379, 1407
Genes, immune response, 1379, 1407
Histocompatibility antigens, 1379, 1407
Immunity, cellular, 1379, 1407
Killer cells, 185
Myeloma proteins
Anti-antibodies, 592, 815
Plasmacytoma
Immunologic techniques, 185
Killer cells, 185
T-Lymphocytes, 185

**Trophoblast**
Antigens
Cell-cell interactions, 824
Lymphocyte culture test, mixed, 824
Cell membrane
Antigenic determinants, 824
Histocompatibility antigens
Antibody specificity, 1238
Haplotype, mouse, 1238
Immune serums
Lymphocyte culture test, mixed, 824

***Trypanosoma cruzi***
*Bacillus Calmette-Guerin*
Phagocytosis, 1056

***Trypanosoma cruzi* (cont'd)**
Macrophages
Phagocytosis, 1056

U

**Uridine, 5-bromo-2'-deoxy-**
T-Lymphocytes
Cell cycle kinetics, 1029
Lymphocyte cooperation, 1537

**Uroporphyrinogen I synthetase**
Androstanes
Pregnanes, 1314
Pregnanes
Erythropoiesis, 1314

V

**Vaccines**
*Streptococcus agalactiae*
Antigens, bacterial, 327

***Vicia villosa***
T-Lymphocytes
Binding, 473
Glycoproteins, 473
Leukocyte culture test, mixed, 473

**Viral proteins**
Virus, murine leukemia
Antigen-antibody complex, 1099

**Virus, AKR murine leukemia**
Antigen-antibody reactions
Cell transformation, neoplastic, 200
Antigens
Cell membrane, 200, 702
Virus, mink cell focus-inducing
Antibody specificity, 200
Antigen-antibody reactions, 200
Antigenic determinants, 702
Virus, recombinant, 702
Virus, recombinant
Antigenic determinants, 702

**Virus, C-type RNA tumor**
Antigenic determinants
Mouse, wild, 254
DNA, viral
DNA-DNA hybridization, 254
Mouse, wild
Isolation and characterization, 254
Virus, Friend murine leukemia
Antigenic determinants, 254
Virus, Moloney murine leukemia
Antigenic determinants, 254
Virus, Rauscher murine leukemia
Antigenic determinants, 254

**Virus, ectromelia**
Radiation chimera
Immunity, cellular, 535
T-Lymphocytes, 535

**Virus, Friend murine leukemia**
Histocompatibility antigens
Immune response, 340
Leukemia
T-Lymphocytes, 273
Virus, C-type RNA tumor
Antigenic determinants, 254
Virus, Friend murine spleen focus-forming
Immune response, 340
Virus, helper, 340
Virus, Moloney murine sarcoma
Lymphocyte culture test, mixed, 1531

**Virus, Friend murine spleen focus-forming**
Antigens, viral
Antibody specificity, 1152
Cell membrane, 1152
Erythroleukemia
Antigens, viral, 1152
*Steel* locus, 837
Precancerous conditions, 340
Hematopoietic stem cells
Cell transformation, viral, 340
Transplantation, homologous, 340
Histocompatibility antigens
Immune response, 340
*Steel* locus
Erythropoiesis, 837
Immune response, 837
Lymphoma
Antigens, viral, 1152
Polycythemia
Virus, helper, 340
Precancerous conditions
Immune response, 340
Radiation, ionizing
Immune response, 837
Virus, Friend murine leukemia
Immune response, 340
Virus, helper, 340
Virus, helper
Cell transformation, viral, 340

**Virus, helper**
Polycythemia
Virus, Friend murine spleen focus-forming, 340
Virus, Friend murine spleen focus-forming
Cell transformation, viral, 340
Virus, Friend murine leukemia, 340

**Virus, influenza**
Genetics
Immune response, mouse, 601
HeLa cells
Transplantation immunology, 1117
Histocompatibility antigens
Immunity, cellular, 565
T-Lymphocytes, 565
Interferon
Immune response, mouse, 601
T-Lymphocytes
*in vitro* cytotoxicity, 565
Macrophages
Immune response, mouse, 601
Interferon, 601

**Virus, influenza type A**
Hemagglutinins, viral
Histocompatibility antigens, 856
Immunity, cellular, 856
T-Lymphocytes, 856

**Virus, measles**
HeLa cells
Transplantation immunology, 1117

**Virus, mink cell focus-inducing**
Antigenic determinants
Antibody specificity, 702
Immunofluorescence absorption assay, 702
Antigens
Cell membrane, 702
Virus, AKR murine leukemia
Antibody specificity, 200
Antigen-antibody reactions, 200
Antigenic determinants, 702
Virus, recombinant, 702
Virus, murine leukemia
Antigenic determinants, 702
Virus, recombinant, 702

**Virus, Moloney murine leukemia**
Lymphoma
Transplantation immunology, 1260
Virus, C-type RNA tumor
Antigenic determinants, 254
Virus, Moloney murine sarcoma
Lymphocyte culture test, mixed, 1531

**Virus, Moloney murine sarcoma**
T-Lymphocytes
Histocompatibility antigens, 1531
Killer cells, 1531
Lymphocyte culture test, mixed, 1531
Sarcoma
Lymphocyte culture test, mixed, 1531
T-Lymphocytes, 1531
Virus, Friend murine leukemia
Lymphocyte culture test, mixed, 1531
Virus, Moloney murine leukemia
Lymphocyte culture test, mixed, 1531
Virus, Rauscher murine leukemia
Lymphocyte culture test, mixed, 1531

**Virus, mumps**
HeLa cells
Transplantation immunology, 1117

**Virus, murine leukemia**
Antibody-dependent cell cytotoxicity
Aging, 358
Antigens, viral
Antibody-dependent cell cytotoxicity, 358
Chromosomes, 1183
Flow microfluorometry, 1183
Genetic crosses, 1183
Lymphocytes, 1183
Blocking activity
Immune serums, 358
Immune serums
Antigen-antibody complex, 1099
Immunity, cellular
Aging, 358

**Virus, murine leukemia (cont'd)**
Killer cells
Immunity, cellular, 358
Lupus erythematosus, systemic
Antigen-antibody complex, 1099
Lymphocytes
Killer cells, 358
Viral proteins
Antigen-antibody complex, 1099
Virus, mink cell focus-inducing
Antigenic determinants, 702
Virus, recombinant, 702

**Virus, pox**
Histocompatibility antigens
Immune response, 724
Lymphocyte culture test, mixed, 724
Macrophage cytotoxicity, 724
T-Lymphocytes
Immune response, 724
Macrophage cytotoxicity, 724

**Virus, radiation leukemia**
Histocompatibility antigens
Immunity, cellular, 898
T-Lymphocytes, 898
T-Lymphocytes
Killer cells, 898

**Virus, Rauscher murine leukemia**
Antigens, viral
Antibody-dependent cell cytotoxicity, 358
Immune serums
Blocking activity, 358
Killer cells
Immunity, cellular, 358
Virus, C-type RNA tumor
Antigenic determinants, 254
Virus, Moloney murine sarcoma
Lymphocyte culture test, mixed, 1531

**Virus, recombinant**
Virus, AKR murine leukemia
Antigenic determinants, 702
Virus, mink cell focus-inducing, 702
Virus, murine leukemia
Virus, mink cell focus-inducing, 702

**Virus, RNA tumor**
HeLa cells
Transplantation immunology, 1117
Killer cells
Spleen cell cytotoxicity, 1117
Transplantation immunology, 1117
Transplantation immunology
BHK cells, 1117
Mouse, nude, 1117

**Virus, Sindbis**
Antigens, viral
Histocompatibility antigens, 786
Histocompatibility antigens
Immune response, mouse, 786
T-Lymphocytes
Histocompatibility antigens, 786
Immune response, mouse, 786
Radiation chimera

**Virus, Sindbis (cont'd)**
Histocompatibility antigens, 786
T-Lymphocytes, 786

**Virus, SV40**
Cyclophosphamide
Histocompatibility antigens, 774
Immunity, cellular, 774
Histocompatibility antigens
Immunity, cellular, 774
Immunization, 774
Immunization
Cyclophosphamide, 774
T-Lymphocytes
Cell transformation, viral, 774

**Virus, vaccinia**
Histocompatibility antigens
Binding sites, 150
Thymus gland, 150
T-Lymphocytes
Histocompatibility antigens, 150
Immunity, cellular, 150
Radiation, ionizing

**Virus, vaccinia (cont'd)**
Histocompatibility antigens, 150

**Virus, vesicular stomatitis**
HeLa cells
Transplantation immunology, 1117
Neoplasm metastasis
Transplantation immunology, 1117

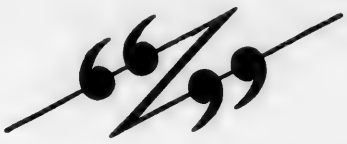
## X

**X Chromosome**
Immunologic deficiency syndromes
B-Lymphocytes, 267

**Xanthine oxidase**
Furan, 2,5-diphenyl-
Neutrophils, 27
Neutrophils
Bacteriolysis, 27

# Biophysical Discussions

**FIRST BOOK OF A SERIES**



## Fast Biochemical Reactions in Solutions, Membranes, and Cells

Proceedings of a Meeting sponsored by the Biophysical Society
2–5 April 1978 at Airlie, Virginia

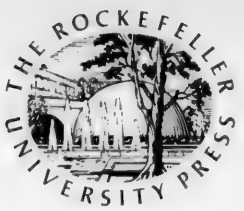
---

**18 Research Papers with Discussion**
**43 Extended Abstracts**

---

400 pages, *hard-covered book*, 7 x 10, 100 graphs and illustrations, fully indexed, $25.

Order from: The Rockefeller University Press, Order Service, 1230 York Avenue, New York 10021 U.S.A.




# MICROFILM AND MICROFICHE

- Produced from highest quality silver halide masters in accordance with specifications recommended by the National Bureau of Standards
- Clear resolution with controlled density and good contrast
- Reproduction cover-to-cover: all articles, announcements, abstracts, supplements, volume and cumulative indexes
- Prompt service; price includes prepaid postage

**MICROFICHE**

- Subscriptions: monthly, simultaneous with paper edition
- Bibliographic color header includes: journal, volume, number, month, year, inclusive pages, fiche-set no., reduction ratio
- 98 frames per fiche
- National Bureau of Standards test target on each fiche
- Reduction ratio 24:1
- High fidelity micrograph production (positive image, JCB)

**MICROFILM**

- Subscriptions: annual, spring of year following
- Blip-coded for automatic page search and retrieval
- Format options: 16 mm/35 mm; positive/negative; cartridge/reel
- Reduction ratio 22:1

## MICROFORM ORDER SUBSCRIPTIONS

| For microfilm fill out format below* → | MICROFILM* publication spring of year following | | MICROFICHE publication simultaneous with paper copy | | TOTAL AMOUNT |
|---|---|---|---|---|---|
| | 1978 | 1979 | 1979 | 1980 | |
| Biophysical Journal | ☐ $25 | ☐ $25 | ☐ $ 80 | ☐ $150 | $ _____ |
| Journal of Cell Biology | ☐ 50 | ☐ 50 | ☐ 125 | ☐ 160 | _____ |
| Journal of Clinical Investigation | ☐ 50 | ☐ 50 | ☐ 75 | ☐ 75 | _____ |
| Journal of Experimental Medicine | ☐ 50 | ☐ 50 | ☐ 85 | ☐ 85 | _____ |
| Journal of General Physiology | ☐ 25 | ☐ 25 | ☐ 60 | ☐ 80 | _____ |
| | | | **Subscription total** | | $ _____ |

* **SPECIFY MICROFILM FORMAT** Check 1 box in each column

Size { 16 mm ☐ / 35 mm ☐ } Film { Positive ☐ / Negative ☐ } Cartridge { 3M ☐ / Kodak ☐ } Open Reel . . . . . ☐

Back copies, from Vol. 1 on, are available at special rates. Inquire at address below.

NAME _____

ADDRESS _____ ☐ Bill me

_____ ZIP _____ ☐ Payment enclosed

*Make checks payable in U.S. currency to The Rockefeller University Press and mail to Box 5108, N.Y., N.Y. 10249*

# THE JOURNAL
## OF
# EXPERIMENTAL MEDICINE


EDITED BY

ZANVIL A. COHN HENRY G. KUNKEL
JAMES G. HIRSCH MACLYN McCARTY

ASSISTANT EDITORS

SHU MAN FU ALLAN R. GOLDBERG
RALPH STEINMAN

ADVISORY EDITORS

K. FRANK AUSTEN
ALEXANDER G. BEARN
BARUJ BENACERRAF
DOROTHEA BENNETT
RUPERT E. BILLINGHAM
BARRY R. BLOOM
FRANK J. DIXON
MARILYN G. FARQUHAR
HIDESABURO HANAFUSA
ATTALLAH KAPPAS
THOMAS J. KINDT
RICHARD M. KRAUSE
FRANK LILLY
GEORGE B. MACKANESS
HUGH O. McDEVITT
HANS J. MÜLLER-EBERHARD
RALPH L. NACHMAN
ROBERT J. NORTH
WILLIAM E. PAUL
BENVENUTO PERNIS
EDWARD REICH
MATTHEW D. SCHARFF
IGOR TAMM
JONATHAN W. UHR
KENNETH S. WARREN
WILLIAM O. WEIGLE
DARCY B. WILSON

VOLUME 149

1979

PUBLISHED MONTHLY BY
THE ROCKEFELLER UNIVERSITY PRESS

COPYRIGHT © 1979 BY THE ROCKEFELLER UNIVERSITY PRESS

# CONTENTS

## Volume 149 No. 1 January 1, 1979


1 RALPH M. STEINMAN, GILLA KAPLAN, MARGARET D. WITMER, and ZANVIL A. COHN. Identification of a novel cell type in peripheral lymphoid organs of mice. V. Purification of spleen dendritic cells, new surface markers, and maintenance in vitro

17 JOS W. M. VAN DER MEER, ROB H. J. BEELEN, DONNA M. FLUITSMA, and RALPH VAN FURTH. Ultrastructure of mononuclear phagocytes developing in liquid bone marrow cultures. A study on peroxidatic activity

27 HENRY ROSEN and SEYMOUR J. KLEBANOFF. Bactericidal activity of a superoxide anion-generating system. A model for the polymorphonuclear leukocyte

40 RONALD H. SCHWARTZ, AKIHIKO YANO, JACK H. STIMPFLING, and WILLIAM E. PAUL. Gene complementation in the T-lymphocyte proliferative response to poly(Glu$^{55}$Lys$^{36}$Phe$^{9}$)n. A demonstration that both immune response gene products must be expressed in the same antigen-presenting cell

58 JOSEPH Y. TAI, EMIL C. GOTSCHLICH, and REBECCA C. LANCEFIELD. Isolation of type-specific polysaccharide antigen from group B type Ib streptococci

67 FRANKLIN ZALMAN, MARY A. MALONEY, and HARVEY M. PATT. Differential response of early erythropoietic and granulopoietic progenitors to dexamethasone and cortisone

73 LESLIE C. BENCHETRIT, LEWIS W. WANNAMAKER, and ERNEST D. GRAY. Immunological properties of hyaluronidases associated with temperate bacteriophages of group A streptococci

84 CARL F. NATHAN, LINDA H. BRUKNER, SAMUEL C. SILVERSTEIN, and ZANVIL A. COHN. Extracellular cytolysis by activated macrophages and granulocytes. I. Pharmacologic triggering of effector cells and the release of hydrogen peroxide

100 CARL F. NATHAN, SAMUEL C. SILVERSTEIN, LINDA H. BRUKNER, and ZANVIL A. COHN. Extracellular cytolysis by activated macrophages and granulocytes. II. Hydrogen peroxide as a mediator of cytotoxicity

114 SUSAN SOLLIDAY RICH, CHELLA S. DAVID, and ROBERT R. RICH. Regulatory mechanisms in cell-mediated immune responses. VII. Presence of *I-C* subregion determinants on mixed leukocyte reaction suppressor factor

127 GARY E. STRIKER, MART MANNIK, and MILLIE Y. TUNG. Role of marrow-derived monocytes and mesangial cells in removal of immune complexes from renal glomeruli

137 GERALD J. PRUD'HOMME, UIK SOHN, and TERRY L. DELOVITCH. The role of H-2 and Ia antigens in graft-versus-host reactions (GVHR). Presence of host alloantigens on donor cells after GVHR and suppression of GVHR with an anti-Ia antiserum against host Ia antigens

150 PETER C. DOHERTY and JACK R. BENNINK. Vaccinia-specific cytotoxic T-cell responses in the context of H-2 antigens not encountered in thymus may reflect aberrant recognition of a virus-H-2 complex

158 STEPHEN P. HAUPTMAN, EMIN KANSU, MARYANN SERNO, and SCOTT GODFREY. Human macromolecular insoluble cold globulin (MICG). I. T-cell origin of T-MICG and null cell origin of N-MICG

172 LOUIS H. MILLER, MASAMICHI AIKAWA, JAMES G. JOHNSON, and TSUGIYE SHIROISHI. Interaction between cytochalasin B-treated malarial parasites and erythrocytes. Attachment and junction formation

185 TOSHIYUKI HAMAOKA, HIROMI FUJIWARA, KUMIKO TESHIMA, HISAKAZU AOKI, HIROSHI YAMAMOTO, and MASAYASU KITAGAWA. Regulatory functions of hapten-reactive helper and suppressor T lymphocytes. III. Amplification of a generation of tumor-specific killer T-lymphocyte activities by suppressor T-cell-depleted hapten-reactive T lymphocytes

200 ELISABETH STOCKERT, ALBERT B. DELEO, PAUL V. O'DONNELL, YUICHI OBATA, and LLOYD J. OLD. $G_{(AKSL2)}$: A new cell surface antigen of the mouse related to the dual tropic mink cell focus-inducing class of murine leukemia virus detected by naturally occurring antibody

216 PATRICIA J. GEARHART and JOHN J. CEBRA. Differentiated B lymphocytes. Potential to express particular antibody variable and constant regions depends on site of lymphoid tissue and antigen load

228 A. B. RESKE-KUNZ, M. P. SCHEID, and E. A. BOYSE. Disproportion in T-cell subpopulations in immunodeficient mutant *hr/hr* mice

234 DONALD BELLGRAU and DARCY B. WILSON. Immunological studies of T-cell receptors. II. Limited polymorphism of idiotypic determinants on T-cell receptors specific for major histocompatibility complex alloantigens

244 G. GREGORY GALLICO, GEOFFREY W. BUTCHER, and JONATHAN C. HOWARD. The role of subregions of the rat major histocompatibility complex in the rejection and passive enhancement of renal allografts

254 MARIANO BARBACID, KEITH C. ROBBINS, and STUART A. AARONSON. Wild mouse RNA tumor viruses. A nongenetically transmitted virus group closely related to exogenous leukemia viruses of laboratory mouse strains

BRIEF DEFINITIVE REPORTS

267 RUTH BENCA KAPLAN and JOSÉ QUINTÁNS. Phosphorylcholine-specific helper T cells in mice with an X-linked defect of antibody production to the same hapten

273 PAUL E. BAKER, STEVEN GILLIS, and KENDALL A. SMITH. Monoclonal cytolytic T-cell lines

279 TOSHIYUKI YONEDA and GREGORY R. MUNDY. Prostaglandins are necessary for osteoclast-activating factor production by activated peripheral blood leukocytes

284 A. GRANELLI-PIPERNO, JEAN-DOMINIQUE VASSALLI, and E. REICH. RNA and protein synthesis in human peripheral blood polymorphonucler leukocytes

290 M. HURME. Differential cyclophosphamide sensitivity of precursor cells in allogeneic and H-2 restricted cytotoxic responses

## Volume 149 No. 2 February 1, 1979

THIRTY-FIFTH ANNIVERSARY

297 OSWALD T. AVERY, COLIN M. MACLEOD, and MACLYN MCCARTY. Studies on the chemical nature of the substance inducing transformation of pneumococcal types. Induction of transformation by a desoxyribonucleic acid fraction isolated from pneumococcus type III

Introduction. Joshua Lederberg

---

327 DENNIS L. KASPER, CAROL J. BAKER, ROBERT S. BALTIMORE, JOSEPH H. CRABB, GERALD SCHIFFMAN, and HAROLD J. JENNINGS. Immunodeterminant specificity of human immunity to type III group B *Streptococcus*

340 ROBERT J. ECKNER and KRISTINE L. HETTRICK. Persistence and pathogenicity of defective Friend spleen focus-forming virus. Decreased transplantability of hemopoietic cells as a marker for preleukemic change

358 MEIR KENDE, RICHARD HILL, MARSHALL DINOWITZ, JOHN R. STEPHENSON, and GARY J. KELLOFF. Naturally occurring lymphocyte-mediated immunity to endogenous type-C virus in the mouse. Blocking of the lymphocyte reactivity with antisera to the virus

372 OTTO GÖTZE, C. BIANCO, and Z. A. COHN. The induction of macrophage spreading by factor B of the properdin system

387 J. SPRENT and H. VON BOEHMER. T-helper function of parent → $F_1$ chimeras. Presence of a separate T-cell subgroup able to stimulate allogeneic B cells but not syngeneic B cells

398 RICHARD HONG, HERMANN SCHULTE-WISSERMANN, ESTHER JARRETT-TOTH, SHELDON D. HOROWITZ, and DEAN D. MANNING. Transplantation of cultured thymic fragments. II. Results in nude mice

416 BRUCE A. WODA and JOSEPH D. FELDMAN. Density of surface immunoglobulin and capping on rat B lymphocytes. I. Changes with aging

424 TE PIAO KING, LOUCIA KOCHOUMIAN, and NICHOLAS CHIORAZZI. Immunological properties of conjugates of ragweed pollen antigen E with methoxypolyethylene glycol or a copolymer of D-glutamic acid and D-lysine

436 GIAMPIETRO CORRADIN and JACQUES M. CHILLER. Lymphocyte specificity to protein antigens. II. Fine specificity of T-cell activation with cytochrome *c* and derived peptides as antigenic probes

448 GREGORY BIESECKER, ECKHARD R. PODACK, CRAIG A. HALVERSON, and HANS J. MÜLLER-EBERHARD. C5b-9 dimer: isolation from complement lysed cells and ultrastructural identification with complement-dependent membrane lesions

459 HERMAN VILLARREAL, JR., VINCENT A. FISCHETTI, IVO VAN DE RIJN, and JOHN B. ZABRISKIE. The occurrence of a protein in the extracellular products of streptococci isolated from patients with acute glomerulonephritis

473 ARTHUR KIMURA, HANS WIGZELL, GÖRAN HOLMQUIST, BO ERSSON, and PIA CARLSSON. Selective affinity fractionation of murine cytotoxic T lymphocytes (CTL). Unique lectin specific binding of the CTL associated surface glycoprotein, T 145

485 CONLETH FEIGHERY and PETER STASTNY. HLA-D region-associated determinants serve as targets for human cell-mediated lysis

495 BONDADA SUBBARAO, DONALD E. MOSIER, AFTAB AHMED, JAMES J. MOND, IRWIN SCHER, and WILLIAM E. PAUL. Role of a nonimmunoglobulin cell surface determinant in the activation of B lymphocytes by thymus-independent antigens

507 W. H. MCBRIDE and J. B. L. BARD. Hyaluronidase-sensitive halos around adherent cells. Their role in blocking lymphocyte-mediated cytolysis

516 ARGYRIOS N. THEOFILOPOULOS, ROBERT A. EISENBERG, MARIO BOURDON, JAMES S. CROWELL, JR., and FRANK J. DIXON. Distribution of lymphocytes identified by surface markers in murine strains with systemic lupus erythematosus-like syndromes

BRIEF DEFINITIVE REPORTS

535 ROBERT V. BLANDEN and MARION E. ANDREW. Primary anti-viral cytotoxic T-cell responses in semiallogeneic chimeras are not absolutely restricted to host H-2 type

539 DAVID H. KATZ. Regulation of IgE antibody production by serum molecules. III. Induction of suppressive activity by allogeneic lymphoid cell interactions and suppression of IgE synthesis by the allogeneic effect

545 ELS GOULMY, JOHN D. HAMILTON, and B. A. BRADLEY. Anti-self HLA may be clonally expressed

551 Correction

## Volume 149 No. 3 March 1, 1979

553 JAN ANDERSSON, ANTONIO COUTINHO, and FRITZ MELCHERS. Mitogen-activated B-cell blasts reactive to more than one mitogen

565 STEPHEN SHAW and WILLIAM E. BIDDISON. HLA-linked genetic control of the specificity of human cytotoxic T-cell responses to influenza virus

576 ROSEMARIE DALCHAU and JOHN W. FABRE. Identification and unusual tissue distribution of the canine and human homologues of Thy-1 (Θ)

592 CONSTANTIN BONA and WILLIAM E. PAUL. Cellular basis of regulation of expression of idiotype. I. T-suppressor cells specific for MOPC 460 idiotype regulate the expression of cells secreting anti-trinitrophenyl antibodies bearing 460 idiotype

601 OTTO HALLER, HEINZ ARNHEITER, ION GRESSER, and JEAN LINDENMANN. Genetically determined, interferon-dependent resistance to influenza virus in mice

613 RONALD N. GERMAIN, SHYR-TE JU, THOMAS J. KIPPS, BARUJ BENACERRAF, and MARTIN E. DORF. Shared idiotypic determinants on antibodies and T-cell-derived suppressor factor specific for the random terpolymer L-glutamic acid$^{60}$-L-alanine$^{30}$-L-tyrosine$^{10}$

623 MARGO P. COHEN and CARLYN V. KLEIN. Glomerulopathy in rats with streptozotocin diabetes. Accumulation of glomerular basement membrane analogous to human diabetic nephropathy

632 C. O. ELSON, J. A. HECK, and W. STROBER. T-cell regulation of murine IgA synthesis

644 MICHAEL G. GOODMAN and WILLIAM O. WEIGLE. Nonspecific activation of murine lymphocytes. VI. Mediation of synergistic interaction between T and B lymphocytes by a cell-associated, reciprocally acting lymphocyte proliferation helper

658 B. S. WILSON, F. INDIVERI, M. A. PELLEGRINO, and S. FERRONE. DR(Ia-like) antigens on human melanoma cells. Serological detection and immunochemical characterization

669 FRITS ØRSKOV, IDA ØRSKOV, ANN SUTTON, RACHEL SCHNEERSON, WENLII LIN, WILLIAM EGAN, GERD EVA HOFF, and JOHN B. ROBBINS. Form variation in *Escherichia coli* K1: determined by O-acetylation of the capsular polysaccharide

686 PETER ERB, BARBARA MEIER, TAKESHI MATSUNAGA, and MARC FELDMANN. Nature of T-cell macrophage interaction in helper-cell induction in vitro. II. Two stages of T-helper-cell differentiation analyzed in irradiation and allophenic chimeras

702 MILES W. CLOYD, JANET W. HARTLEY, and WALLACE P. ROWE. Cell-surface antigens associated with recombinant mink cell focus-inducing murine leukemia viruses

713 GAIL W. GOODMAN and BARNET M. SULTZER. Endotoxin protein is a mitogen and polyclonal activator of human B lymphocytes

724 HELEN C. O'NEILL and R. V. BLANDEN. Quantitative differences in the expression of parentally-derived H-2 antigens in $F_1$ hybrid mice affect T-cell responses

732 KENT J. WEINHOLD, LESTER T. GOLDSTEIN, and E. FREDERICK WHEELOCK. The tumor dormant state. Quantitation of L5178Y cells and host immune responses during the establishment and course of dormancy in syngeneic DBA/2 mice

745 KENT J. WEINHOLD, DOROTHY A. MILLER, and E. FREDERICK WHEELOCK. The tumor dormant state. Comparison of L5178Y cells used to establish dormancy with those that emerge after its termination

758 STEPHEN D. MILLER, RICHARD P. WETZIG, and HENRY N. CLAMAN. The induction of cell-mediated immunity and tolerance with protein antigens coupled to syngeneic lymphoid cells

BRIEF DEFINITIVE REPORTS

774 MOSHE GLASER. Regulation of specific cell-mediated cytotoxic response against SV40-induced tumor associated antigens by depletion of suppressor T cells with cyclophosphamide in mice

780 PHILIPPA MARRACK and JOHN W. KAPPLER. The role of *H-2*-linked genes in helper T-cell function. VI. Expression of *Ir* genes by helper T cells

786 A. MULLBACHER and R. V. BLANDEN. *H-2*-linked control of cytotoxic T-cell responsiveness to alphavirus infection. Presence of $H\text{-}2D^k$ during differentiation and stimulation converts stem cells of low responder genotype to T cells of responder phenotype

## Volume 149 No. 4 April 1, 1979

793 JERRY R. MCGHEE, JOHN J. FARRAR, SUZANNE M. MICHALEK, STEPHAN E. MERGENHAGEN, and DAVID L. ROSENSTREICH. Cellular requirements for lipopolysaccharide adjuvanticity. A role for both T lymphocytes and macrophages for in vitro responses to particulate antigens

808 J. DOUGLAS WATERFIELD, GUNTHER DENNERT, SUSAN L. SWAIN, and RICHARD W. DUTTON. Continuously proliferating allospecific T cells. I. Specificity of cooperation with allogeneic B cells in the humoral antibody response to sheep erythrocytes

815 C. BONA, R. HOOGHE, P. A. CAZENAVE, C. LEGUÉRN, and W. E. PAUL. Cellular basis of regulation of expression of idiotype. II. Immunity to anti-MOPC-460 idiotype antibodies increases the level of anti-trinitrophenyl antibodies bearing 460 idiotypes

824 JOHN A. MCINTYRE and W. PAGE FAULK. Antigens of human trophoblast. Effects of heterologous anti-trophoblast sera on lymphocyte responses in vitro

837 DOROTHY MCCOOL, TAK W. MAK, and ALAN BERNSTEIN. Cellular regulation in Friend virus induced erythroleukemia. Studies with anemic mice of genotype $Sl/Sl^d$

847 A. G. SCICLI, R. WALDMANN, J. A. GUIMARAES, G. SCICLI, O. A. CARRETERO, H. KATO, Y. N. HAN, and S. IWANAGA. Relationship between structure and correcting activity of bovine high molecular weight kininogen upon the clotting time of Fitzgerald-trait plasma

856 T. J. BRACIALE. Specificity of cytotoxicity T cells directed to influenza virus hemagglutinin

870 ROBERT D. SCHREIBER, DAVID C. MORRISON, ECKHARD R. PODACK, and HANS J. MÜLLER-EBERHARD. Bactericidal activity of the alternative complement pathway generated from 11 isolated plasma proteins

883 W. DEIMANN and H. D. FAHIMI. The appearance of transition forms between monocytes and Kupffer cells in the liver of rats treated with glucan. A cytochemical and ultrastructural study

898 DANIEL MERUELO. A role for elevated H-2 antigen expression in resistance to neoplasia caused by radiation-induced leukemia virus. Enhancement of effective tumor surveillance by killer lymphocytes

910 HANS BINZ, HANNES FRISCHKNECHT, FUNG W. SHEN, and HANS WIGZELL. Idiotypic determinants on T-cell subpopulations

923 WOLFGANG SCHALCH, J. KEITH WRIGHT, L. SCOTT RODKEY, and DIETMAR G. BRAUN. Distinct functions of monoclonal IgG antibody depend on antigen-site specificities

938 SEYMOUR J. KLEBANOFF, CHARLES, A. FOERDER, E. M. EDDY, and BENNETT M. SHAPIRO. Metabolic similarities between fertilization and phagocytosis. Conservation of a peroxidatic mechanism

954 CAROL GODOSHIAN RAGSDALE and WILLIAM P. AREND. Neutral protease secretion by human monocytes. Effect of surface-bound immune complexes

BRIEF DEFINITIVE REPORTS

969 S. J. COLLINS, F. W. RUSCETTI, R. E. GALLAGHER, and R. C. GALLO. Normal functional characteristics of cultured human promyelocytic leukemia cells (HL-60) after induction of differentiation by dimethylsulfoxide

975 TEN FEIZI, ROBERT A. CHILDS, KIYOHIRO WATANABE, and SEN ITIROH HAKOMORI. Three types of blood group I specificity among monoclonal anti-I autoantibodies revealed by analogues of a branched erythrocyte glycolipid

981 RICHARD G. COOK, ELLEN S. VITETTA, JONATHAN W. UHR, and J. DONALD CAPRA. Structural studies on the murine Ia alloantigens. V. Evidence that the structural gene for the I-E/C beta polypeptide is encoded within the *I-A* subregion

987 LINDA B. BUCK, DOROTHY YUAN, and ELLEN S. VITETTA. A dichotomy between the expression of IgD on B cells and its requirement for triggering such cells with two T-independent antigens

993 ROGER M. PERLMUTTER, MOON NAHM, KATHRYN E. STEIN, JOHN SLACK, IAN ZITRON, WILLIAM E. PAUL, and JOSEPH M. DAVIE. Immunoglobulin in subclass-specific immunodeficiency in mice with an X-linked B-lymphocyte defect

## Volume 149 No. 5 May 1, 1979

1001 MAY-KIN HO, AH SWEE KONG, and STEPHEN I. MORSE. The in vitro effects of *Bordetella pertussis* lymphocytosis-promoting factor on murine lymphocytes. III. B-cell dependence for T-cell proliferation

1018 AKIO MITSUOKA, SHIGERU MORIKAWA, MITSUO BABA, and TAKAYUKI HARADA. Cyclophoshamide eliminates suppressor T cells in age-associated central regulation of delayed hypersensitivity in mice

1029 RAYMOND R. TICE, EDWARD L. SCHNEIDER, DAVID KRAM, and PHIL THORNE. Cytokinetic analysis of the impaired proliferative response of peripheral lymphocytes from aged humans to phytohemagglutinin

1042 W. S. HENDRY, N. L. TILNEY, W. M. BALDWIN, III, M. J. GRAVES, E. MILFORD, T. B. STROM, and C. B. CARPENTER. Transfer of specific unresponsiveness to organ allografts by thymocytes. Specific unresponsiveness by thymocyte transfer

1056 CARL NATHAN, NADIA NOGUEIRA, CHAWANEE JUANGBHANICH, JOAN ELLIS, and ZANVIL COHN. Activation of macrophages in vivo and in vitro. Correlation between hydrogen peroxide release and killing of *Trypanosoma cruzi*

1069 MARK IRWIN GREENE, BRUCE ALLEN BACH, and BARUJ BENACERRAF. Mechanisms of regulation of cell-mediated immunity. III. The characterization of azobenzenearsonate-specific suppressor T-cell-derived-suppressor factors

1084 BRUCE ALLEN BACH, MARK IRWIN GREENE, BARUJ BENACERRAF, and ALFRED NISONOFF. Mechanisms of regulation of cell-mediated immunity. IV. Azobenzenearsonate-specific suppressor factor(s) bear cross-reactive idiotypic determinants the expression of which is linked to the heavy-chain allotype linkage group of genes

1099 SHOZO IZUI, PATRICIA J. MCCONAHEY, ARGYRIOS N. THEOFILOPOULOS, and FRANK J. DIXON. Association of circulating retroviral gp70-anti-gp70 immune complexes with murine systemic lupus erythematosus

1117 NAGAHIRO MINATO, BARRY R. BLOOM, CHARLOTTE JONES, JOHN HOLLAND, LOLA M. REID. Mechanism of rejection of virus persistently infected tumor cells by athymic nude mice

1134 C. A. WATERS, L. M. PILARSKI, T. G. WEGMANN, and E. DIENER. Tolerance induction during ontogeny. I. Presence of active suppression in mice rendered tolerant to human γ-globulin in utero correlates with the breakdown of the tolerant state

1152 REX RISSER. Friend erythroleukemia antigen. A viral antigen specified by spleen focus-forming virus and differentiation antigen controlled by the *Fv-2* locus

1168 D. ELLIOT PARKS, DAVID A. SHALLER, and WILLIAM O. WEIGLE. Induction and mode of action of suppressor cells generated against human gamma globulin. II. Effects of colchicine

1183 HERBERT C. MORSE, III, THOMAS M. CHUSED, JANET W. HARTLEY, BONNIE J. MATHIESON, SUSAN O. SHARROW, and BENJAMIN A. TAYLOR. Expression of xenotropic murine leukemia viruses as cell-surface gp70 in genetic crosses between strains DBA/2 and C57BL/6

1197 MAN-SUN SY, STEPHEN D. MILLER, JOHN W. MOORHEAD, and HENRY N. CLAMAN. Active suppression of 1-fluoro-2,4-dinitrobenzene-immune T cells. Requirement of an auxiliary T cell-induced by antigen

1208 ALFRED SINGER, KAREN S. HATHCOCK, and RICHARD J. HODES. Cellular and genetic control of antibody responses. V. Helper T-cell recognition of H-2 determinants on accessory cells but not B cells

1227 VILHO J. PASANEN, RICHARD ASOFSKY, and PHILIP J. BAKER. Synthesis of two classes of antibody, γM and γG or γM and γA, by identical cells. Amplification of the antibody response to pneumoccal polysaccharide type III

1238 SASWATI CHATTERJEE-HASROUNI and PEEYUSH K. LALA. Localization of H-2 antigens on mouse trophoblast cells

BRIEF DEFINITIVE REPORTS

1254 JEANNE E. GOSE and FRITZ H. BACH. H-2 I region encoded targets in allograft rejection

1260 M. KASAI, J. C. LECLERC, L. MCVAY-BOUDREAU, F. W. SHEN, and H. CANTOR. Direct evidence that NK cells in nonimmune spleen cell populations prevent tumor growth in vivo

1265 CLAUDE DE PREVAL, BONNIE BLOMBERG, and MELVIN COHN. Determination of the kappa anti-α (1,3) dextran immune response difference (IR) by a gene(s) in the $v_x$-locus of mice

## Volume 149 No. 6 June 1, 1979

1273 ENRIQUE M. RABELLINO, RALPH L. NACHMAN, NEIL WILLIAMS, ROBERT J. WINCHESTER, and GORDON D. ROSS. Human megakaryocytes. I. Characterization of the membrane and cytoplasmic components of isolated marrow megakaryocytes

1288 HANNAH LUSTIG SHEAR, RUTH S. NUSSENZWEIG, and CELSO BIANCO. Immune phagocytosis in murine malaria

1299 ELVIN A. KABAT, TAI TE WU, and HOWARD BILOFSKY. Evidence supporting somatic assembly of the DNA segments (minigenes), coding for the framework, and complementarity-determining segments of immunoglobulin variable regions

1314 AKIO URABE, SHIGERU SASSA, and ATTALLAH KAPPAS. The influence of steroid hormone metabolites on the in vitro development of erythroid colonies derived from human bone marrow

1326 M. B. KAHALEH, G. K. SHERER, and E. C. LEROY. Endothelial injury in scleroderma

1336 JUDAH Z. WEINBERGER, MARK I. GREENE, BARUJ BENACERRAF, and MARTIN E. DORF. Hapten-specific T-cell responses to 4-hydroxy-3-nitrophenyl acetyl. I. Genetic control of delayed-type hypersensitivity by $V_H$ and I-A-region genes

1349 DANIELE PRIMI, GEORGE K. LEWIS, RICHARD TRIGLIA, and JOEL W. GOODMAN. Rosette formation between murine lymphocytes and erythrocytes. A new locus in the H-2 region

1360 DAVID H. KATZ, LEE R. KATZ, CHERYL A. BOGOWITZ, and BARRY J. SKIDMORE. Adaptive differentiation of murine lymphocytes. II. The thymic microenvironment does not restrict the cooperative partner cell preference of helper T cells differentiating in $F_1 \rightarrow F_1$ thymic chimeras

1371 BYUNG, S. KIM. Mechanisms of idiotype suppression. I. In vitro generation of idiotype-specific suppressor T cells by anti-idiotype antibodies and specific antigen

1379 ROBERT B. LEVY and GENE M. SHEARER. Regulation of T-cell-mediated lympholysis by the murine major histocompatibility complex. I. Preferential in vitro responses to trinitrophenyl-modified self K- and D-coded gene products in parental and $F_1$ hybrid mouse strains

1393 AH SWEE KONG and STEPHEN I. MORSE. The in vitro effects of *Bordetella pertussis* lymphocytosis-promoting factor on murine lymphocytes. IV. Generation, characterization, and specificity of cytotoxic lymphocytes

1407 GENE M. SHEARER, ANNE-MARIE SCHMITT-VERHULST, CARLA B. PETTINELLI, MATTHEW W. MILLER, and PAMELA E. GILHEANY. H-2-linked genetic control of murine T-cell-mediated lympholysis to autologous cells modified with low concentrations of trinitrobenzene sulfonate

1424 CHANG YI WANG, SHU MAN FU, and HENRY G. KUNKEL. Isolation and immunological characterization of a major surface glycoprotein (gp54) preferentially expressed on certain human B cells

1438 ERNEST D. GRAY. Purification and properties of an extracellular blastogen produced by group A streptococci

1450 THOMAS W. HUANG. Basal lamina heterogeneity in the glomerular capillary tufts of human kidneys

1460 STEVEN GILLIS, NANCY A. UNION, PAUL E. BAKER, and KENDALL A. SMITH. The in vitro generation and sustained culture of nude mouse cytolytic T-lymphocytes

1477 DAVID M. GIBSON and SHEILA J. MACLEAN. Ef2: a new *LY-3*-linked light-chain marker expressed in normal mouse serum immunoglobulin

1487 CHARLES W. PARKER, JAMES P. KELLY, SANDRA F. FALKENHEIN, and MARY G. HUBER. Release of arachidonic acid from human lymphocytes in response to mitogenic lectins

1504 A. BLUSSÉ VAN OUD ALBLAS and R. VAN FURTH. Origin, kinetics, and characteristics of pulmonary macrophages in the normal steady state

1519 J. L. VAN SNICK and P. L. MASSON. Age-dependent production of IgA and IgM autoantibodies against IgG2a in a colony of 129/Sv mice

BRIEF DEFINITIVE REPORTS

1531 JOAN M. CHAPDELAINE, FERNANDO PLATA, AND FRANK LILLY. Tumors induced by murine sarcoma virus contain precursor cells capable of generating tumor-specific cytolytic T lymphocytes

1537 PERRIE B. HAUSMAN and JOHN D. STOBO. Specificity and function of a human autologous reactive T cell

1543 NICHOLAS CHIORAZZI, SHU MAN FU, and HENRY G. KUNKEL. Induction of polyclonal antibody synthesis by human allogeneic and autologous helper factors

1549 Index to Volume 149

# AUTHOR INDEX


## A

**Adler, F. L.** *see* Yamada, Adler, Adler
**Adler, L. T.** *see* Yamada, Adler, Adler
**Adorini, L., Harvey, M. A., Miller, A., Sercarz, E. E.,** Fine specificity of regulatory T cells. II. Suppressor and helper T cells are induced by different regions of hen egg-white lysozyme in a genetically nonresponder mouse strain, 293
**Ahrlund-Richter, L.** *see* Roder, Ahrlund-Richter, Jondal
**Althage, A.** *see* Zinkernagel, Althage, Callahan
**Andersson, B.** *see* Lindsten, Andersson
**Andersson, J., Lernhardt, W., Melchers, F.,** The purified protein derivative of tuberculin, a B-cell mitogen that distinguishes in its action resting, small B-cells from activated B-cell blasts, **1339**
**Armstrong, M. Y. K.** *see* Ebenstein, Kinder, Bankole, Richards, Armstrong
**Arnheiter, H.** *see* Haller, Arnheiter, Lindenmann
**Artenstein, M. S.** *see* Lowell, Smith, Artenstein, Nash, MacDermott
Ashman, R. B., Mullbacher, A., A T helper cell for anti-viral cytotoxic T-Cell responses, 1277
—. *see* Blanden, Mullbacher, Ashman
**Austen, K. F.** *see* Kazatchkine, Fearon, Silbert, Austen
**Ayoub, E. M.** *see* Rifai, Small, Teague, Ayoub

## B

**Bach, B. A.** *see* Sy, Bach, Brown, Nisonoff, Benacerraf, Greene
—. *see* Sy, Bach, Dohi, Nisonoff, Benacerraf, Greene
**Bainton, D. F.** *see* Westen, Bainton
**Baker, P. J.** *see* Schroer, Kim, Prescott, Baker
**Baltimore, D.** *see* Loh, Ross, Hale, Baltimore, Eisen
**Bankole, D. O.** *see* Ebenstein, Kinder, Bankole, Richards, Armstrong
**Baranoski, L.** *see* Yamazaki, Yamaguchi, Baranoski, Bard, Boyse, Thomas
**Barber, B. H.** *see* Delovitch, Barber
**Bard, J.** *see* Yamazaki, Yamaguchi, Baranoski, Bard, Boyse, Thomas
**Barnes, B. A.** *see* Dvorak, Mihm, Dvorak, Barnes, Manseau, Galli
**Barz, D.** *see* Morein, Barz, Koszinowski, Schirrmacher
**Batchelor, J. R., Welsh, K. I., Maynard, A., Burgos, H.,** Failure of long surviving, passively enhanced kidney allografts to provoke T-dependent alloimmunity. I. Retransplantation of (AS x AUG)$F_1$ kidneys into secondary AS recipients, **455**
—. *see* Welsh, Batchelor, Maynard, Burgos
**Battles, D. R.** *see* Jegasothy, Battles
**Bazin, H.** *see* Socken, Jeejeebhoy, Bazin, Underdown
**Beachey, E. H., Stollerman, G. H., Johnson, R. H., Ofek, I., Bisno, A. L.,** Human immune response to immunization with a structurally defined polypeptide fragment of streptococcal M protein, **862**
**Benacerraf, B.** *see* Sy, Bach, Brown, Nisonoff, Benacerraf, Greene
—. *see* Sy, Bach, Dohi, Nisonoff, Benacerraf, Greene
—. *see* Weinberger, Benacerraf, Dorf
—. *see* Weinberger, Germain, Ju, Greene, Benacerraf, Dorf
**Bennett, M.** *see* Kumar, Luevano, Bennett
**Bennink, J. R.** *see* Doherty, Bennink
**Bergh, O. J.** *see* Hirschberg, Bergh, Thorsby
**Berridge, M. V.,** A new class of cell surface antigens. Quantitative absorption studies defining cell-lineage-specific antigens on hemopoietic cells, **977**
**Besedovsky, H. O., Del Rey, A., Sorkin, E.,** Role of prethymic cells in acquisition of self-tolerance, **1351**
**Bhan, A. K., Collins, A. B., Schneeberger, E. E., McCluskey, R. T.,** A cell-mediated reaction against glomerular-bound immune complexes, **1410**
**Binz, H., Frischknecht, H., Mercolli, C., Dunst, S., Wigzell, H.,** Binding of purified, soluble major histocompatibility complex polypeptide chains onto isolated T-cell receptors. I. Reactivity against allo- and self-determinants, **1084**
**Birshtein, B. K.** *see* Diamond, Birshtein, Scharff
**Bisno, A. L.** *see* Beachey, Stollerman, Johnson, Ofek, Bisno
**Black, S. J., Herzenberg, L. A.,** B-cell influences on the induction of allotype suppressor T cells, **174**
**Blanden, R. V., Mullbacher, A., Ashman, R. B.,** Different *D* end-dependent antigenic determinants are recognized by H-2-restricted cytotoxic T cells specific for influenza and Bebaru viruses, **166**
**Bogowitz, C. A.** *see* Katz, Katz, Bogowitz, Maurer
**Bosma, M. J.** *see* DeWitt, Bosma
**Bottomly, K., Mosier, D. E.,** Mice whose B cells cannot produce the T15 idiotype also lack an antigen- specific helper T cell required for T15 expression, **1399**
**Boyse, E. A.** *see* Rothenberg, Boyse
—. *see* Yamazaki, Yamaguchi, Baranoski, Bard, Boyse, Thomas
**Brown, A.** *see* Sy, Bach, Brown, Nisonoff, Benacerraf, Greene
**Brown, J. C., Rodkey, L. S.,** Autoregulation of an antibody response via network-induced auto/anti-idiotype, **67**
**Broxmeyer, H. E.** *see* Pelus, Broxmeyer, Kurland, Moore
**Bruce, J.** *see* Sprent, Bruce
**Buchmuller, Y., Mauel, J.,** Studies on the mechanisms of macrophage activation. II. Parasite destruction in macrophages activated by supernates from concanavalin A-stimulated lymphocytes, **359**
**Burgos, H.** *see* Batchelor, Welsh, Maynard, Burgos
—. *see* Welsh, Batchelor, Maynard, Burgos
**Butterworth, A. E., Vadas, M. A., Wassom, D. L., Dessein, A., Hogan, M., Sherry, B., Gleich, G. J., David, J. R.,** Interactions between human eosinophils and schistosomula of *Schistosoma mansoni*. II. The mechanism of irreversible eosinophil adherence, **1456**

C

**Callahan, G.** *see* Zinkernagel, Althage, Callahan
**Cantor, H.** *see* Eardley, Shen, Cantor, Gershon
**Capra, J. D.** *see* Kubagawa, Vogler, Capra, Conrad, Lawton, Cooper
**Casazza, B. A.** *see* Moody, Casazza, Christenson, Weksler
**Cerami, A.** *see* Monnier, Stevens, Cerami
**Chesebro, B.** *see* Doig, Chesebro
**Chiller, J. M.** *see* Rosenberg, Chiller
**Christenson, W. N.** *see* Moody, Casazza, Christenson, Weksler
**Chu, L.** *see* Rich, Sedberry, Kastner, Chu
**Chun, M., Pasanen, V., Hammerling, U., Hammerling, G. F., Hoffmann, M. K.,** Tumor necrosis serum induces a serologically distinct population of NK cells, **426**
**Chused, T. M.** *see* Taurog, Moutsopoulos, Rosenberg, Chused, Steinberg
**Cochrane, C. C.** *see* Wiggins, Cochrane
**Cohn, Z. A.** *see* Murray, Cohn
—. *see* Murray, Juangbhanich, Nathan, Cohn
**Collignon, C.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,
**Collins, A. B.** *see* Bhan, Collins, Schneeberger, McCluskey
**Compans, R. W.** *see* Griffin, Compans
**Conrad, M. E.** *see* Kubagawa, Vogler, Capra, Conrad, Lawton, Cooper
**Cooper, M. D.** *see* Kubagawa, Vogler, Capra, Conrad, Lawton, Cooper
**Copper, N. R.** *see* Sissons, Schreiber, Perrin, Copper, Muller-Eberhard, Oldstone
**Croce, C. M.** *see* Huebner, Tsuchida. N., Green, Croce

D

**David, C. S.** *see* Solliday Rich, David
**David, J. R.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**De Groote, D.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,
**Del Rey, A.** *see* Besedovsky, Del Rey, Sorkin
**Delovitch, T. L., Barber, B. H.,** Evidence for two homologous, but nonidentical, Ia molecules determined by the *I-EC* subregion, **100**
**Dessein, A.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**DeWitt, C. L., Bosma, M. J.,** Radioimmune analysis of an unexpected mouse allotype, **351**
**Diamantstein, T., Willinger, E., Reiman, J.,** T-suppressor cells sensitive to cyclophosphamide and to its in vitro active derivative 4-hydroperoxy-cyclophosphamide control the mitogenic response of murine splenic B-cells to dextran sulfate. A direct proof for different sensitivities of lymphocyte subsets to cyclophosphamide, **1571**
**Diamond, B., Birshtein, B. K., Scharff, M. D.,** Site of binding of mouse $IgG_{2b}$ to the Fc receptor on mouse macrophages, **721**
**Dinarello, C. A.** *see* Rosenwasser, Dinarello, Rosenthal
**Doherty, P. C., Bennink, J. R.,** Patterns of virus-immune T cell responsiveness. Comparison of ($H\text{-}2^k$ x $H\text{-}2^b$) → $H\text{-}2^b$ radiation chimeras and negatively selected $H\text{-}2^b$ lymphocytes, **1187**
**Dohi, Y., Nisonoff, A.,** Suppression of idiotype and generation of suppressor T cells with idiotype-conjugated thymocytes, **909**
—. *see* Sy, Bach, Dohi, Nisonoff, Benacerraf, Greene
**Doig, D., Chesebro, B.,** Anti-Friend virus antibody is associated with recovery from viremia and loss of viral leukemia cell-surface antigens in leukemic mice. Identification of Rfv-3 as a gene locus influencing antibody production, **10**
**Dorf, M. E.** *see* Weinberger, Benacerraf, Dorf
—. *see* Weinberger, Germain, Ju, Greene, Benacerraf, Dorf
**Dunst, S.** *see* Binz, Frischknecht, Mercolli, Dunst, Wigzell
**Dvorak, A. M.** *see* Dvorak, Mihm, Dvorak, Barnes, Manseau, Galli
**Dvorak, H. F., Mihm, M. C., Jr., Dvorak, A. M., Barnes, B. A., Manseau, E. J., Galli, S. J.,** Rejection of first-set skin allografts in man. The microvasculature is the critical target of the immune response, **322**

E

**Eardley, D. D., Shen, F. W., Cantor, H., Gershon, R. K.,** Genetic control of immunoregulatory circuits. Genes linked to the Ig locus govern communication between regulatory T-cell sets, **44**
**Ebenstein, P., Kinder, B., Bankole, D. O., Richards, F. F., Armstrong, M. Y. K.,** Expression of endogenous xenotropic retrovirus by methylcholanthrene induced squamous cell carcinoma of the mouse respiratory tract, **1567**
**Eisen, H. N.** *see* Loh, Ross, Hale, Baltimore, Eisen
**Elliott, B. E.** *see* Nagy, Elliott

F

**Fearon, D. T.** *see* Kazatchkine, Fearon, Silbert, Austen
**Fellous, M.** *see* Lipinski, Fridman, Tursz, Vincent, Pious, Fellous
**Fialkow, P. J.** *see* Reddy, Fialkow
**Fidler, J. M.,** The induction of hapten-specific immunological tolerance and immunity in B lymphocytes. VI. Differential tolerance susceptibility in adult spleen as a function of B-cell maturation level, **491**
**Flaherty, L., Zimmerman, D., Wachtel, S. S.,** H-Y Antigen. Cell surface mapping and testosterone-induced supramolecular repatterning, **1020**
—. *see* Hammerling, Hammerling, Flaherty
**Forman, J., Streilein, J. W.,** T cells recognize minor histocompatibility antigens on H-2 allogeneic cells, **1001**
**Franssen, J-D.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,
**Fridman, W. H.** *see* Lipinski, Fridman, Tursz, Vincent, Pious, Fellous
**Frischknecht, H.** *see* Binz, Frischknecht, Mercolli, Dunst, Wigzell
**Fry, J. F.** *see* Orlans, Peppard, Fry, Hinton, Mullock

**Fu, S. M.** *see* Ko, Fu, Winchester, Yu, Kunkel
**Fujita, T., Nussenzweig, V.,** The role of C4-binding protein and β1H in proteolysis of C4b and C3b, **267**

G

**Galli, S. J.** *see* Dvorak, Mihm, Dvorak, Barnes, Manseau, Galli
**Germain, R. N.** *see* Weinberger, Germain, Ju, Greene, Benacerraf, Dorf
**Gershon, R. K.** *see* Eardley, Shen, Cantor, Gershon
**Gillis, S.** *see* Watson, Gillis, Marbrook, Mochizuki, Smith
**Gleich, G. J.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**Go, S.** *see* Kitamura, Shimada, Go, Matsuda, Hatanaka, Seki
**Goetzl, E. J., Sun, F. F.,** Generation of unique monohydroxy-eicosatetraenoic acids from arachidonic acid by human neutrophils, **406**
**Goidl, E. A., Schrater, A. F., Siskind, G. W., Thorbecke, G. J.,** Production of auto-anti-idiotypic antibody during the normal immune response to TNP-Ficoll. II. Hapten-reversible inhibition of anti-TNP plaque-forming cells by immune serum as an assay for auto-anti-idiotypic antibody, **154**
—. *see* Schrater, Goidl, Thorbecke, Siskind
**Goldberg, C. L.** *see* Koo, Goldberg, Shen
**Goldstein, G.** *see* Reinherz, Kung, Pesando, Ritz, Goldstein, Schlossman
**Goodman, J. W.** *see* Primi, Lewis, Goodman
**Goodwin, J. S., Kaszubowski, P. A., Williams, R. C., Jr.,** Cyclic adenosine monophosphate response to prostaglandin $E_2$ on subpopulations of human lymphocytes, **1260**
**Gordon, S.** *see* Lin, Gordon
**Goulmy, E.** *see* van Leeuwen, Goulmy, van Rood
**Green, C.** *see* Huebner, Tsuchida. N., Green, Croce
**Green, W. R., Nowinski, R. C., Henney, C. S.,** The generation and specificity of cytotoxic T cells raised against syngeneic tumor cells bearing AKR/Gross murine leukemia virus antigens, **51**
**Greene, M. I.** *see* Sy, Bach, Brown, Nisonoff, Benacerraf, Greene
—. *see* Sy, Bach, Dohi, Nisonoff, Benacerraf, Greene
—. *see* Weinberger, Germain, Ju, Greene, Benacerraf, Dorf
**Griffin, F. M.** *see* Griffin, Griffin
**Griffin, J. A., Compans, R. W.,** Effect of cytochalasin B on the maturation of enveloped viruses, **379**
—. **Griffin, F. M.,** Augmentation of macrophage complement receptor function in vitro. I. Characterization of the cellular interactions required for the generation of a T-lymphocyte product that enhances macrophage complement receptor function, **653**

H

**Haas, W.** *see* Von Boehmer, Haas
**Hahn, H.** *see* Kaufmann, Simon, Hahn
**Hakomori, S.-I.** *see* Young, MacDonald, Nowinski, Hakomori
**Hale, A. H.** *see* Loh, Ross, Hale, Baltimore, Eisen
**Haller, O., Arnheiter, H., Lindenmann, J.,** Natural, genetically determined resistance toward influenza virus in hemopoietic mouse chimeras. Role of mononuclear phagocytes, **117**
**Hammerling, G. F.** *see* Chun, Pasanen, Hammerling, Hammerling, Hoffmann
**Hammerling, G. J., Hammerling, U., Flaherty, L.,** Qat-4 and Qat-5, new murine T-cell antigens governed by the *Tla* region and identified by monoclonal antibodies, **108**
**Hammerling, U.** *see* Chun, Pasanen, Hammerling, Hammerling, Hoffmann
—. *see* Hammerling, Hammerling, Flaherty
**Harvey, M. A.** *see* Adorini, Harvey, Miller, Sercarz
**Hatanaka, K.** *see* Kitamura, Shimada, Go, Matsuda, Hatanaka, Seki
**Hatanaka, M., Klein, R.,** Tumorigenicity of Indian muntjac diploid cells by the proviral integration of sarcoma gene of a mouse retrovirus, **1195**
**Hedrick, S. M., Watson, J.,** Genetic control of the immune response to collagen. II. Antibody responses produced in fetal liver restored radiation chimeras and thymus reconstituted $F_1$ hybrid nude mice, **646**
**Henney, C. S.** *see* Green, Nowinski, Henney
**Hertel-Wulff, B.** *see* Rubin, Hertel-Wulff, Kimura
**Herzenberg, L. A.** *see* Black, Herzenberg
**Hinton, R. H.** *see* Orlans, Peppard, Fry, Hinton, Mullock
**Hirschberg, H., Bergh, O. J., Thorsby, E.,** Clonal distribution of HLA-restricted antigen-reactive T cells in man, **1271**
**Hoffmann, M. K.** *see* Chun, Pasanen, Hammerling, Hammerling, Hoffmann
**Hogan, M.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**Holden, H. T.** *see* Taniyama, Holden
**Huebner, K., Tsuchida. N., Green, C., Croce, C. M.,** A murine teratocarcinoma stem cell line carries suppressed oncogenic virus genomes, **392**
**Hunsicker, L. G., Shearer, T. P., Plattner, S. B., Welsenburger, D.,** The role of monocytes in serum sickness nephritis, **413**

I

**Itaya, T., Ovary, Z.,** Suppression of IgE antibody production in SJL mice. IV. Interaction of primed and unprimed T cells, **507**
**Ito, S.** *see* Rikihisa, Ito

J

**Jackson, S., Mestecky, J.,** Presence of plasma cells binding autologous antibody during an immune response, **1265**
**Jeejeebhoy, K. N.** *see* Socken, Jeejeebhoy, Bazin, Underdown

**Jegasothy, B. V., Battles, D. R.,** Immuno-suppressive lymphocyte factors. I. Purification of inhibitor of DNA synthesis to homogeneity, **622**

**Jimenez, S. A., McArthur, W., Rosenbloom, J.,** Inhibition of collagen synthesis by mononuclear cell supernates, **1421**

**Johnson, R. H.** *see* Beachey, Stollerman, Johnson, Ofek, Bisno

**Jondal, M.** *see* Roder, Ahrlund-Richter, Jondal

**Ju, S-T.** *see* Weinberger, Germain, Ju, Greene, Benacerraf, Dorf

**Juangbhanich, C. W.** *see* Murray, Juangbhanich, Nathan, Cohn

K

**Kappler, J. W.** *see* Swierkosz, Marrack, Kappler

**Kastner, D. L.** *see* Rich, Sedberry, Kastner, Chu

**Kaszubowski, P. A.** *see* Goodwin, Kaszubowski, Williams

**Katz, D. H., Katz, L. R., Bogowitz, C. A., Maurer, P. H.,** Adaptive differentiation of murine lymphocytes. IV. (Responder x nonresponder) $F_1$ T cells can be taught to preferentially help nonresponder, rather than responder, B cells, **20**

—. *see* Yamamoto, Nonaka, Katz

**Katz, L. R.** *see* Katz, Katz, Bogowitz, Maurer

**Kaufmann, S. H. E., Simon, M. M., Hahn, H.,** Specific Lyt 123 T cells are involved in protection against *Listeria monocytogenes* and in delayed-type hypersensitivity to listerial antigens, **1033**

**Kazatchkine, M. D., Fearon, D. T., Silbert, J. E., Austen, K. F.,** Surface-associated heparin inhibits zymosan-induced activation of the human alternative complement pathway by augmenting the regulatory action of the control proteins on particle-bound C3b, **1202**

**Kennerly, D. A., Sullivan, T. J., Sylwester, P., Parker, C. W.,** Diacylglycerol metabolism in mast cells: A potential role in membrane fusion and arachidonic acid release, **1039**

**Kessler, R. E., van de Rijn, I., McCarty, M.,** Characterization and localization of the enzymatic deacylation of lipoteichoic acid in group A streptococci, **1498**

**Kim, K. J.** *see* Schroer, Kim, Prescott, Baker

**Kimura, A.** *see* Rubin, Hertel-Wulff, Kimura

**Kincade, P. W.** *see* Paige, Kincade, Moore, Lee

**Kinder, B.** *see* Ebenstein, Kinder, Bankole, Richards, Armstrong

**Kitamura, Y., Shimada, M., Go, S., Matsuda, H., Hatanaka, K., Seki, M.,** Distribution of mast-cell precursors in hematopoietic and lymphopoietic tissues of mice, **482**

**Klein, R.** *see* Hatanaka, Klein

**Ko, H.-S., Fu, S. M., Winchester, R. J., Yu, D. T. Y., Kunkel, H. G.,** Ia determinants on stimulated human T lymphocytes. Occurrence on mitogen- and antigen-activated T cells, **246**

**Kohn, H. I.** *see* McKenzie, Morgan, Sandrin, Michaelides, Melvold, Kohn

**Koo, G. C., Goldberg, C. L., Shen, F.-W.,** Inhibition of H-Y cell-mediated cytolysis by H-$2D^b$ antiserum, **1028**

**Koszinowski, U.** *see* Morein, Barz, Koszinowski, Schirrmacher

**Kotzin, B. L., Strober, S.,** Reversal of NZB/NZW disease with total lymphoid irradiation, **371**

**Kubagawa, H., Vogler, L. B., Capra, J. D., Conrad, M. E., Lawton, A. R., Cooper, M. D.,** Studies on the clonal origin of multiple myeloma. Use of individually specific (idiotype) antibodies to trace the oncogenic event to its earliest point of expression in B-cell differentiation, **792**

**Kumar, V., Luevano, E., Bennett, M.,** Hybrid resistance to EL-4 lymphoma cells. I. Characterization of natural killer cells that lyse EL-4 cells and their distinction from marrow-dependent natural killer cells, **531**

**Kung, P. C.** *see* Reinherz, Kung, Pesando, Ritz, Goldstein, Schlossman

**Kunkel, H. G.** *see* Ko, Fu, Winchester, Yu, Kunkel

**Kurland, J. I.** *see* Pelus, Broxmeyer, Kurland, Moore

L

**Langreth, S. G., Reese, R. T.,** Antigenicity of the infected-erythrocyte and merozoite surfaces in *Falciparum* malaria, **1241**

**Lawton, A. R.** *see* Kubagawa, Vogler, Capra, Conrad, Lawton, Cooper

**Layton, J. E.** *see* Teale, Layton, Nossal

**Lee, G.** *see* Paige, Kincade, Moore, Lee

**Lees, R. K.** *see* MacDonald, Lees

**Leo, O.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,

**Lernhardt, W.** *see* Andersson, Lernhardt, Melchers

**Lewis, G. K.** *see* Primi, Lewis, Goodman

**Li, L. T. C.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,

**Lightholder, J.** *see* Schmidt-Ullrich, Wallach, Lightholder

**Lilly, F.** *see* Plata, Lilly

**Lin, H.-S., Gordon, S.,** Secretion of plasminogen activator by bone marrow-derived mononuclear phagocytes and its enhancement by colony-stimulating factor, **231**

**Lindenmann, J.** *see* Haller, Arnheiter, Lindenmann

**Lindsten, T., Andersson, B.,** Ontogeny of B cells in CBA/N mice. Evidence for a stage of responsiveness to thymus-independent antigens during development, **1285**

**Lipinski, M., Fridman, W. H., Tursz, T., Vincent, C., Pious, D., Fellous, M.,** Absence of allogeneic restriction in human T-cell-mediated cytotoxicity to Epstein-Barr virus-infected target cells. Demonstration of an HLA-linked control at the effector level, **1310**

**Loh, D., Ross, A. H., Hale, A. H., Baltimore, D., Eisen, H. N.,** Synthetic phospholipid vesicles containing a purified viral antigen and cell membrane proteins stimulate the development of cytotoxic T lymphocytes, **1067**

**Lowell, G. H., Smith, L. F., Artenstein, M. S., Nash, G. S., MacDermott, R. P., Jr.,** Antibody-dependent cell-mediated antibacterial activity of human mononuclear cells. I. K lymphocytes and monocytes are effective against meningococci in cooperation with human immune sera, **127**

**Luevano, E.** *see* Kumar, Luevano, Bennett

M

**MacDermott, R. P., Jr.** *see* Lowell, Smith, Artenstein, Nash, MacDermott

**MacDonald, E. M. S.** *see* Young, MacDonald, Nowinski, Hakomori

**MacDonald, H. R., Lees, R. K.,** Primary generation of cytolytic T lymphocytes in the absence of DNA synthesis, **196**

**Manischewitz, J. E.** *see* Quinnan, Manischewitz

**Manseau, E. J.** *see* Dvorak, Mihm, Dvorak, Barnes, Manseau, Galli

**Marbrook, J.** *see* Watson, Gillis, Marbrook, Mochizuki, Smith

**Margoliash, E.** *see* Solinger, Ultee, Margoliash, Schwartz

**Mariame, P.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,

**Marrack, P.** *see* Swierkosz, Marrack, Kappler

**Matsuda, H.** *see* Kitamura, Shimada, Go, Matsuda, Hatanaka, Seki

**Mauel, J.** *see* Buchmuller, Mauel

**Maurer, P. H.** *see* Katz, Katz, Bogowitz, Maurer

**Maynard, A.** *see* Batchelor, Welsh, Maynard, Burgos

—. *see* Welsh, Batchelor, Maynard, Burgos

**McAdam, K. P. W. J.** *see* Sipe, Vogel, Ryan, McAdam, Rosenstreich

**McArthur, W.** *see* Jimenez, McArthur, Rosenbloom

**McCarty, M.** *see* Kessler, van de Rijn, McCarty

**McCluskey, R. T.** *see* Bhan, Collins, Schneeberger, McCluskey

**McKenzie, I. F. C., Morgan, G. M., Sandrin, M. S., Michaelides, M. M., Melvold, R. W., Kohn, H. I.,** A new *H-2* mutation in the *I* region in the mouse, **1323**

**Melchers, F.** *see* Andersson, Lernhardt, Melchers

**Melvold, R. W.** *see* McKenzie, Morgan, Sandrin, Michaelides, Melvold, Kohn

**Mercolli, C.** *see* Binz, Frischknecht, Mercolli, Dunst, Wigzell

**Mestecky, J.** *see* Jackson, Mestecky

**Michaelides, M. M.** *see* McKenzie, Morgan, Sandrin, Michaelides, Melvold, Kohn

**Michl, J., Pieczonka, M. M., Unkeless, J. C., Silverstein, S. C.,** Effects of immobilized immune complexes on Fc- and complement-receptor function in resident and thioglycollate-elicited mouse peritoneal macrophages, **607**

**Mihm, M. C., Jr.** *see* Dvorak, Mihm, Dvorak, Barnes, Manseau, Galli

**Miller, A.** *see* Adorini, Harvey, Miller, Sercarz

**Miller, J. F. A. P.** *see* Smith, Miller

**Miller, S. D.,** Suppressor T-cell mechanisms in contact sensitivity. III. Apparent non-major histocompatibility complex restriction is a result of multiple sets of major histocompatibility complex-specific suppressor T cells induced by syngeneic 2,4-dinitrophenyl-modified lymphoid cells, **676**

**Mochizuki, D.** *see* Watson, Gillis, Marbrook, Mochizuki, Smith

**Monnier, V. M., Stevens, V. J., Cerami, A.,** Nonenzymatic glycosylation, sulfhydryl oxidation, and aggregation of lens proteins in experimental sugar cataracts, **1098**

**Moody, C. E., Casazza, B. A., Christenson, W. N., Weksler, M. E.,** Lymphocyte transformation induced by autologous cells. VIII. Impaired autologous mixed lymphocyte reactivity in patients with acute infectious mononucleosis, **1448**

**Moore, M. A. S.** *see* Paige, Kincade, Moore, Lee

—. *see* Pelus, Broxmeyer, Kurland, Moore

**Moorhead, J. W.,** Soluble factors in tolerance and contact sensitivity to 2,4-dinitro-fluorobenzene in mice. III. Histocompatibility antigens associated with the hapten dinitrophenol serve as target molecules on 2,4-dinitrofluoro- benzene-immune T cells for soluble suppressor factor, **1432**

**Morein, B., Barz, D., Koszinowski, U., Schirrmacher, V.,** Integration of a virus membrane protein into the lipid bilayer of target cells as a prerequisite for immune cytolysis. Specific cytolysis after virosome-target cell fusion, **1383**

**Morgan, E. L., Weigle, W. O.,** The requirement for adherent cells in the Fc fragment-induced proliferative response of murine spleen cells, **256**

**Morgan, G. M.** *see* McKenzie, Morgan, Sandrin, Michaelides, Melvold, Kohn

**Mosier, D. E.** *see* Bottomly, Mosier

**Moutsopoulos, H. M.** *see* Taurog, Moutsopoulos, Rosenberg, Chused, Steinberg

**Mullbacher, A.** *see* Ashman, Mullbacher

—. *see* Blanden, Mullbacher, Ashman

**Muller-Eberhard, H. J.** *see* Sissons, Schreiber, Perrin, Copper, Muller-Eberhard, Oldstone

**Mullock, B. M.** *see* Orlans, Peppard, Fry, Hinton, Mullock

**Mundy, G. R.** *see* Yoneda, Mundy

**Murray, H. W., Cohn, Z. A.,** Macrophage oxygen-dependent antimicrobial activity. I. Susceptibility of *Toxoplasma gondii* to oxygen intermediates, **938**

—. **Juangbhanich, C. W., Nathan, C. F., Cohn, Z. A.,** Macrophage oxygen-dependent antimicrobial activity. II. The role of oxygen intermediates, **950**

N

**Nachman, R. L.** *see* Polley, Nachman

**Nagy, Z. A., Elliott, B. E.,** The receptor specificity of alloreactive T cells. Distinction between stimulator K, I, and D region products and degeneracy of third-party H-2 recognition by low-affinity T cells, **1520**

**Nash, G. S.** *see* Lowell, Smith, Artenstein, Nash, MacDermott

**Nathan, C. F.** *see* Murray, Juangbhanich, Nathan, Cohn

**Nisonoff, A.** *see* Dohi, Nisonoff

—. *see* Sy, Bach, Brown, Nisonoff, Benacerraf, Greene

—. *see* Sy, Bach, Dohi, Nisonoff, Benacerraf, Greene

**Nonaka, M.** *see* Yamamoto, Nonaka, Katz

**Nossal, G. J. V.** *see* Teale, Layton, Nossal

**Nowinski, R. C.** *see* Green, Nowinski, Henney

—. *see* Young, MacDonald, Nowinski, Hakomori

**Nussenzweig, V.** *see* Fujita, Nussenzweig

O

**Oettgen, H. F.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,

**Ofek, I.** *see* Beachey, Stollerman, Johnson, Ofek, Bisno

**Old, L. J.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,

**Oldstone, M. B. A.** *see* Sissons, Schreiber, Perrin, Copper, Muller-Eberhard, Oldstone

**Orlans, E., Peppard, J., Fry, J. F., Hinton, R. H., Mullock, B. M.,** Secretory component as the receptor for polymeric IgA on rat hepatocytes, **1577**

**Ottaway, C. A., Parrott, D. M. V.,** Regional blood flow and its relationship to lymphocyte and lymphoblast traffic during a primary immune reaction, **218**

**Ovary, Z.** *see* Itaya, Ovary

P

**Paige, C. J., Kincade, P. W., Moore, M. A. S., Lee, G.,** The fate of fetal and adult B-cell progenitors grafted into immunodeficient CBA/N mice, **548**

**Parker, C. W.** *see* Kennerly, Sullivan, Sylwester, Parker

**Parr, E. L.,** The absence of H-2 antigens from mouse pancreatic $\beta$-cells demonstrated by immunoferritin labeling, **1**

**Parrott, D. M. V.** *see* Ottaway, Parrott

**Pasanen, V.** *see* Chun, Pasanen, Hammerling, Hammerling, Hoffmann

**Pelus, L. M., Broxmeyer, H. E., Kurland, J. I., Moore, M. A. S.,** Regulation of macrophage and granulocyte proliferation. Specificities of prostaglandin E and lactoferrin, **277**

**Peppard, J.** *see* Orlans, Peppard, Fry, Hinton, Mullock

**Perrin, L. H.** *see* Sissons, Schreiber, Perrin, Copper, Muller-Eberhard, Oldstone

**Pesando, J. M.** *see* Reinherz, Kung, Pesando, Ritz, Goldstein, Schlossman

**Pfreundschuh, M.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,

**Pieczonka, M. M.** *see* Michl, Pieczonka, Unkeless, Silverstein

**Pious, D.** *see* Lipinski, Fridman, Tursz, Vincent, Pious, Fellous

**Plata, F., Lilly, F.,** Viral specificity of H-2-restricted T killer cells directed against syngeneic tumors induced by Gross, Friend, or Rauscher leukemia virus, **1174**

**Plattner, S. B.** *see* Hunsicker, Shearer, Plattner, Weisenburger

**Polley, M. J., Nachman, R. L.,** Human complement in thrombin-mediated platelet function. Uptake of the C5b-9 complex, **633**

**Prescott, B.** *see* Schroer, Kim, Prescott, Baker

**Primi, D., Lewis, G. K., Goodman, J. W.,** A hemolytic plaque assay for activated murine T cells, **987**

Q

**Quinnan, G. V., Manischewitz, J. E.,** The role of natural killer cells and antibody-dependent cell-mediated cytotoxicity during murine cytomegalovirus infection, **1549**

R

**Reddy, A. L., Fialkow, P. J.,** Multicellular origin of fibrosarcomas in mice induced by the chemical carcinogen 3-methylcholanthrene, **878**

**Reese, R. T.** *see* Langreth, Reese

**Reiman, J.** *see* Diamantstein, Willinger, Reiman

**Reinherz, E. L., Kung, P. C., Pesando, J. M., Ritz, J., Goldstein, G., Schlossman, S. F.,** Ia determinants on human T-cell subsets defined by monoclonal antibody. Activation stimuli required for expression, **1472**

**Rich, R. R., Sedberry, D. A., Kastner, D. L., Chu, L.,** Primary in vitro cytotoxic response of NZB spleen cells to Qa-$1^b$ - associated antigenic determinants, **1555**

**Richards, F. F.** *see* Ebenstein, Kinder, Bankole, Richards, Armstrong

**Rifai, A., Small, P. A., Jr., Teague, P. O., Ayoub, E. M.,** Experimental IgA nephropathy, **1161**

**Rikihisa, Y., Ito, S.,** Intracellular localization of *Rickettsia tsutsugamushu* in polymorphonuclear leukocytes, **703**

**Ritz, J.** *see* Reinherz, Kung, Pesando, Ritz, Goldstein, Schlossman

**Roder, J. C., Ahrlund-Richter, L., Jondal, M.,** Target-effector interaction in the human and murine natural killer system. Specificity and xenogeneic reactivity of the solubilized natural killer-target structure complex and its loss in a somatic cell hybrid, **471**

**Rodkey, L. S.** *see* Brown, Rodkey

**Rollwagen, F. M., Stutman, O.,** Ontogeny of culture-generated suppressor cells, **1359**

**Rosenberg, Y. J.,** Influence of the sex-linked defect in CBA/N mice on autoimmune responses to isologous erythrocytes: ability to overcome the defect with age, **1551**

—. **Chiller, J. M.,** Ability of antigen-specific helper cells to effect a class-restricted increase in total Ig-secreting cells in spleens after immunization with the antigen, **517**

—. *see* Taurog, Moutsopoulos, Rosenberg, Chused, Steinberg

**Rosenbloom, J.** *see* Jimenez, McArthur, Rosenbloom

**Rosenstreich, D. L.** *see* Sipe, Vogel, Ryan, McAdam, Rosenstreich

**Rosenthal, A. S.** *see* Rosenwasser, Dinarello, Rosenthal

**Rosenwasser, L. J., Dinarello, C. A., Rosenthal, A. S.,** Adherent cell function in murine T-lymphocyte antigen recognition. IV. Enhancement of murine T-cell antigen recognition by human leukocytic pyrogen, **709**

**Ross, A. H.** *see* Loh, Ross, Hale, Baltimore, Eisen

**Rothenberg, E., Boyse, E. A.,** Synthesis and processing of molecules bearing thymus leukemia antigen, **777**

**Rubin, B., Hertel-Wulff, B., Kimura, A.,** Alloantigen-specific idiotype-bearing receptors on mouse T lymphocytes. I. Specificity characterization and genetic association with the heavy-chain IgG allotype, **307**

**Ryan, J. L.** *see* Sipe, Vogel, Ryan, McAdam, Rosenstreich

S

**Sachs, D. H.** *see* Shinohara, Sachs

**Sandrin, M. S.** *see* McKenzie, Morgan, Sandrin, Michaelides, Melvold, Kohn
**Scharff, M. D.** *see* Diamond, Birshtein, Scharff
**Schirrmacher, V.** *see* Morein, Barz, Koszinowski, Schirrmacher
**Schlossman, S. F.** *see* Reinherz, Kung, Pesando, Ritz, Goldstein, Schlossman
**Schmidt-Ullrich, R., Wallach, D. F. H., Lightholder, J.,** Two *Plasmodium knowlesi*-specific antigens on the surface of schizont-infected Rhesus monkey erythrocytes induce antibody production in immune hosts, **86**
**Schneeberger, E. E.** *see* Bhan, Collins, Schneeberger, McCluskey
**Schrater, A. F., Goidl, E. A., Thorbecke, G. J., Siskind, G. W.,** Production of auto-anti-idiotypic antibody during the normal immune response to TNP-Ficoll. I. Occurrence in AKR/J and BALB/c mice of hapten-augmentable, anti-TNP plaque-forming cells and their accelerated appearance in recipients of immune spleen cells, **138**
—. **Goidl, E. A., Thorbecke, G. J., Siskind, S. W.,** Production of auto-anti-idiotypic antibody during the normal immune response to TNP-Ficoll. III. Absence in nu/nu mice: evidence for T-cell dependence of the anti-idiotypic-antibody response, **808**
—. *see* Goidl, Schrater, Siskind, Thorbecke
**Schreiber, R. D.** *see* Sissons, Schreiber, Perrin, Copper, Muller-Eberhard, Oldstone
**Schroer, K. R., Kim, K. J., Prescott, B., Baker, P. J.,** Generation of anti-type III pneumococcal polysaccharide hybridomas from mice with an X-linked B-lymphocyte defect, **698**
**Schwartz, R. H.** *see* Solinger, Ultee, Margoliash, Schwartz
**Sedberry, D. A.** *see* Rich, Sedberry, Kastner, Chu
**Seki, M.** *see* Kitamura, Shimada, Go, Matsuda, Hatanaka, Seki
**Sercarz, E. E.** *see* Adorini, Harvey, Miller, Sercarz
**Shearer, T. P.** *see* Hunsicker, Shearer, Platner, Weisenburger
**Shen, F. W.** *see* Eardley, Shen, Cantor, Gershon
**Shen, F.-W.** *see* Koo, Goldberg, Shen
**Sherry, B.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**Shiku, H.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,
**Shimada, M.** *see* Kitamura, Shimada, Go, Matsuda, Hatanaka, Seki
**Shinohara, N., Sachs, D. H.,** Mouse alloantibodies capable of blocking cytotoxic T-cell function. I. Relationship between the antigen reactive with blocking antibodies and the *Lyt-2* locus, **432**
**Silbert, J. E.** *see* Kazatchkine, Fearon, Silbert, Austen
**Silverstein, S. C.** *see* Michl, Pieczonka, Unkeless, Silverstein
**Simon, M. M.** *see* Kaufmann, Simon, Hahn
**Sipe, J. D., Vogel, S. N., Ryan, J. L., McAdam, K. P. W. J., Rosenstreich, D. L.,** Detection of a mediator derived from endotoxin-stimulated macrophages that induces the acute phase serum amyloid A response in mice, **597**
**Siskind, G. W.** *see* Goidl, Schrater, Siskind, Thorbecke
**Siskind, G. W. (cont'd)**
—. *see* Schrater, Goidl, Thorbecke, Siskind
**Siskind, S. W.** *see* Schrater, Goidl, Thorbecke, Siskind
**Sissons, J. G., Schreiber, R. D., Perrin, L. H., Copper, N. R., Muller-Eberhard, H. J., Oldstone, M. B. A.,** Lysis of measles virus-infected cells by the purified cytolytic alternative complement pathway and antibody, **445**
**Small, P. A., Jr.** *see* Rifai, Small, Teague, Ayoub
**Smith, F. I., Miller, J. F. A. P.,** Delayed-type hypersensitivity to allogeneic cells in mice. III. Sensitivity to cell surface antigens coded by the major histocompatibility complex and by other genes, **965**
**Smith, K. A.** *see* Watson, Gillis, Marbrook, Mochizuki, Smith
**Smith, L. F.** *see* Lowell, Smith, Artenstein, Nash, MacDermott
**Socken, D. J., Jeejeebhoy, K. N., Bazin, H., Underdown, B. J.,** Identification of secretory component as an IgA receptor on rat hepatocytes, **1538**
**Solinger, A. M., Ultee, M. E., Margoliash, E., Schwartz, R. H.,** T-lymphocyte response to cytochrome *c*. I. Demonstration of a T-cell heteroclitic proliferative response and identification of a topographic antigenic determinant on pigeon cytochrome *c* whose immune recognition requires two complementing major histocompatibility complex-linked immune response genes, **830**
**Solliday Rich, S., David, C. S.,** Regulatory mechanisms in cell-mediated immune responses. VIII. Differential expression of I-region determinants by suppressor cells and their targets in suppression of mixed leukocyte reactions, **1108**
**Sorkin, E.** *see* Besedovsky, Del Rey, Sorkin
**Sprent, J., Bruce, J.,** Lymphoid function in $F_1 \rightarrow$ parent chimeras. Lack of evidence for adaptive differentiation of B cells or antigen-presenting cells, **715**
**Stein, H.** *see* Thoenes, Stein
**Steinberg, A. D.** *see* Taurog, Moutsopoulos, Rosenberg, Chused, Steinberg
**Stevens, V. J.** *see* Monnier, Stevens, Cerami
**Stollerman, G. H.** *see* Beachey, Stollerman, Johnson, Ofek, Bisno
**Streilein, J. W.** *see* Forman, Streilein
**Strober, S.** *see* Kotzin, Strober
**Stutman, O.** *see* Rollwagen, Stutman
**Sullivan, T. J.** *see* Kennerly, Sullivan, Sylwester, Parker
**Sun, F. F.** *see* Goetzl, Sun
**Suzuki, K., Tomasi, T. B.,** Immune responses during pregnancy. Evidence of suppressor cells for splenic antibody response, **898**
**Swierkosz, J. E., Marrack, P., Kappler, J. W.,** Functional analysis of T cells expressing IA antigens. I. Demonstration of helper T-cell heterogeneity, **1293**
**Sy, M.-S., Bach, B. A., Brown, A., Nisonoff, A., Benacerraf, B., Greene, M. I.,** Antigen and receptor-driven regulatory mechanisms. II. Induction of suppressor T cells with idiotype-coupled syngeneic spleen cells, **1229**
—. **Bach, B. A., Dohi, Y., Nisonoff, A., Benacerraf, B., Greene, M. I.,** Antigen- and receptor-driven regulatory mechanisms. I. Induction of suppressor T cells with anti-idiotypic antibodies, **1216**
**Sylwester, P.** *see* Kennerly, Sullivan, Sylwester, Parker

## T

**Takahashi, T.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,
**Taniyama, T., Holden, H. T.,** In vitro induction of T-lymphocyte-mediated cytotoxicity by infectious murine type C oncornaviruses, **1367**
**Taurog, J. D., Moutsopoulos, H. M., Rosenberg, Y. J., Chused, T. M., Steinberg, A. D.,** CBA/N X-linked B-cell defect prevents NZB B-cell hyperactivity in $F_1$ mice, **31**
**Teague, P. O.** *see* Rifai, Small, Teague, Ayoub
**Teale, J. M., Layton, J. E., Nossal, G. J. V.,** In vitro model for natural tolerance to self-antigens. Inhibition of the development of surface-immunoglobulin-negative lymphocytes into T-dependent responsive B cells by antigen, 205
**Thoenes, J., Stein, H.,** Properties of an Fc $\gamma$-binding protein isolated from human leukemic B cells, **1049**
**Thomas, L.** *see* Yamazaki, Yamaguchi, Baranoski, Bard, Boyse, Thomas
**Thorbecke, G. J.** *see* Goidl, Schrater, Siskind, Thorbecke
—. *see* Schrater, Goidl, Thorbecke, Siskind
—. *see* Schrater, Goidl, Thorbecke, Siskind
**Thorsby, E.** *see* Hirschberg, Bergh, Thorsby
**Tomasi, T. B.** *see* Suzuki, Tomasi
**Tsuchida. N.** *see* Huebner, Tsuchida. N., Green, Croce
**Tursz, T.** *see* Lipinski, Fridman, Tursz, Vincent, Pious, Fellous

## U

**Ueda, R., Shiku, H., Pfreundschuh, M., Takahashi, T., Li, L. T. C., Whitmore, W. F., Oettgen, H. F., Old, L. J.,** Cell surface antigens of human renal cancer defined by autologous typing, **564**
**Ultee, M. E.** *see* Solinger, Ultee, Margoliash, Schwartz
**Unanue, E. R.** *see* Ziegler, Unanue
**Underdown, B. J.** *see* Socken, Jeejeebhoy, Bazin, Underdown
**Unkeless, J. C.,** Characterization of a monoclonal antibody directed against mouse macrophage and lymphocyte Fc receptors, **580**
—. *see* Michl, Pieczonka, Unkeless, Silverstein
**Urbain, J.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,

## V

**Vadas, M. A.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**van de Rijn, I.** *see* Kessler, van de Rijn, McCarty
**van De Walle, P.** *see* Wikler, Franssen, Collignon, Leo, Mariame, Van De Walle, De Groote, Urbain,
**van Leeuwen, A., Goulmy, E., van Rood, J. J.,** Major histocompatibility complex-restricted antibody reactivity mainly, but not exclusively, directed against cells from male donors, **1075**
**van Rood, J. J.** *see* van Leeuwen, Goulmy, van Rood
**Vincent, C.** *see* Lipinski, Fridman, Tursz, Vincent, Pious, Fellous
**Vogel, S. N.** *see* Sipe, Vogel, Ryan, McAdam, Rosenstreich
**Vogler, L. B.** *see* Kubagawa, Vogler, Capra, Conrad, Lawton, Cooper
**von Boehmer, H., Haas, W.,** Distinct IR genes for helper and killer cells in the cytotoxic response to H-Y antigen, **1134**

## W

**Wachtel, S. S.** *see* Flaherty, Zimmerman, Wachtel
**Wallach, D. F. H.** *see* Schmidt-Ullrich, Wallach, Lightholder
**Wassom, D. L.** *see* Butterworth, Vadas, Wassom, Dessein, Hogan, Sherry, Gleich, David,
**Watson, J.,** Continuous proliferation of murine antigen-specific helper T lymphocytes in culture, **1510**
—. **Gillis, S., Marbrook, J., Mochizuki, D., Smith, K. A.,** Biochemical and biological characterization of lymphocyte regulatory molecules. I. Purification of a class of murine lymphokines, **849**
—. *see* Hedrick, Watson
**Watson, J. D.** *see* Whitlock, Watson
**Weigle, W. O.** *see* Morgan, Weigle
**Weinberger, J. Z., Benacerraf, B., Dorf, M. E.,** Ir gene controlled carrier effects in the induction and elicitation of hapten-specific delayed-type hypersensitivity responses, **1255**
—. **Germain, R. N., Ju, S-T., Greene, M. I., Benacerraf, B., Dorf, M. E.,** Hapten-specific T-cell responses to 4-hydroxy-3-nitrophenyl acetyl. II. Demonstration of idiotypic determinants on suppressor T cells, **761**
**Weisenburger, D.** *see* Hunsicker, Shearer, Plattner, Weisenburger
**Weksler, M. E.** *see* Moody, Casazza, Christenson, Weksler
**Welsh, K. I., Batchelor, J. R., Maynard, A., Burgos, H.,** Failure of long surviving, passively enhanced kidney allografts to provoke T-dependent alloimmunity. II. Retransplantation of (AS x AUG)$F_1$ kidneys from AS primary recipients into (AS x WF)$F_1$ secondary hosts, **465**
—. *see* Batchelor, Welsh, Maynard, Burgos
**Westen, H., Bainton, D. F.,** Association of alkaline-phosphatase-positive reticulum cells in bone marrow with granulocytic precursors, **919**
**Whitlock, C. A., Watson, J. D.,** B-cell differentiation in the CBA/N mouse. I. Slow maturation of mitogen and antigen responsive B cells in mice expressing an X-linked defect, **1483**
**Whitmore, W. F.** *see* Ueda, Shiku, Pfreundschuh, Takahashi, Li, Whitmore, Oettgen, Old,
**Wiggins, R. C., Cochrane, C. C.,** The autoactivation of rabbit Hageman factor, **1122**
**Wigzell, H.** *see* Binz, Frischknecht, Mercolli, Dunst, Wigzell
**Wikler, M., Franssen, J-D., Collignon, C., Leo, O., Mariame, P., Van De Walle, P., De Groote, D., Urbain, J.,** Idiotypic regulation of the immune system. Common idiotypic specificities between idiotypes and antibodies raised against anti-idiotypic antibodies in rabbits, **184**

**Williams, R. C., Jr.** *see* Goodwin, Kaszubowski, Williams
**Willinger, E.** *see* Diamantstein, Willinger, Reiman
**Winchester, R. J.** *see* Ko, Fu, Winchester, Yu, Kunkel

Y

**Yamada, A., Adler, L. T., Adler, F. L.,** A role for clonal dominance in the maintenance of allotype suppression, **888**
**Yamaguchi, M.** *see* Yamazaki, Yamaguchi, Baranoski, Bard, Boyse, Thomas
**Yamamoto, H., Nonaka, M., Katz, D. H.,** Suppression of hapten-specific delayed-type hypersensitivity responses in mice by idiotype-specific suppressor T-cells after administration of anti-idiotypic antibodies, **818**
**Yamazaki, K., Yamaguchi, M., Baranoski, L., Bard, J., Boyse, E. A., Thomas, L.,** Recognition among mice. Evidence from the use of a Y-maze differentially scented by congenic mice of different major histocompatibility types, **755**
**Yoneda, T., Mundy, G. R.,** Monocytes regulate osteoclast-activating factor production by releasing prostaglandins, **338**
**Young, W. W., MacDonald, E. M. S., Nowinski, R. C., Hakomori, S.-I.,** Production of monoclonal antibodies specific for two distinct steric portions of the glycolipid ganglio-*N*-triosylceramide (asialo $GM_2$), **1008**
**Yu, D. T. Y.** *see* Ko, Fu, Winchester, Yu, Kunkel

Z

**Ziegler, K., Unanue, E. R.,** The specific binding of *Listeria monocytogenes*-immune T lymphocytes to macrophages. I. Quantitation, role of H-2 gene products, **1143**
**Zimmerman, D.** *see* Flaherty, Zimmerman, Wachtel
**Zinkernagel, R. M., Althage, A., Callahan, G.,** Thymic reconstitution of nude $F_1$ mice with one or both parental thymus grafts, **693**

# SUBJECT INDEX


A

**Acetic acid, mercapto-**
Macrophages
Antigen-antibody complex, 607

**Acetylgalactosamine**
$GM_2$ ganglioside
Antibody specificity, 1008

**Actin**
Virus, influenza
Cytochalasin B, 379

**Adenocarcinoma**
Kidney neoplasms
Antigenic determinants, 564

**Adenosine cyclic-3',5'-monophosphate**
Histamine
Lymphocytes, 1260
T Lymphocytes
Prostaglandins E, 1260

**Age factors**
Erythrocytes
Autoantibodies, 1551

**Alkaline phosphatase**
Cell membrane
Hematopoietic stem cells, 919
Fibroblasts
Bone marrow, 919
Granulocytes
Bone marrow, 919
Hematopoietic stem cells
Cell differentiation, 919
Lysosomes
Hematopoietic stem cells, 919
Macrophages
Bone marrow, 919

**Alloantibodies**
*see* Isoantibodies

**Alloantigens**
*see* Isoantigens

**Allograft**
*see* Transplantation, allogeneic

**Amino acids**
Cytochrome *c*
Antigenic determinants, 830

**Amyloid**
Immune serums
Inflammation, 597
Lipopolysaccharides
Immune serums, 597

**Anemia, aplastic**
Histocompatibility antigens
Immunity, cellular, 1075
IgM
Histocompatibility antigens, 1075
Immune serums, 1075
Immune serums
Antibody-dependent cell cytotoxicity, 1075

**Anti-antibodies**
Autoimmune disease
NZB/NZW mouse, 371
*p*-Azobenzenearsonate
Hypersensitivity, delayed, 1216, 1229
Immune tolerance, 1229
B Lymphocytes
Cell differentiation, 174
IgG, 174
IgM, 174
Immunosuppression, 174
T Lymphocytes
Immunity, cellular, 1310
Suppressor cells, 1216
*Micrococcus lysodeikticus*
Antibody specificity, 184
Carbohydrates, 184
Synthesis, rabbit, 184
Virus, Epstein-Barr
T Lymphocytes, 1310
Virus, tobacco mosaic
Antibody specificity, 184
Synthesis, rabbit, 184

**Antibody, autologous**
*see* Autoantibodies

**Antibody-dependent cell cytotoxicity**
Anemia, aplastic
Immune serums, 1075
Blood proteins
Cytolytic alternative pathway, 445
IgM
Histocompatibility antigens, 1075
*Neisseria meningitidis*
K Lymphocytes, 127
Monocytes, 127
Properdin
Virus, measles, 445
Virus, measles
HeLa cells, 445
Virus, Semliki Forest
Membrane proteins, 1383

**Antibody formation**
Autoantibodies
Inhibitory factor, 154
Spleen, mouse, 138
Chromosome abnormalities

**Antibody formation (cont'd)**
B Lymphocytes, 1483
Haptens
Autoantibodies, 138
2,4-Dinitrophenyl-ε-amino-*n*-caproic acid, 138
Nude mouse, 808
Plaque assay, 138, 154
Spleen, mouse, 138, 154
Trinitrophenyls, 808
Hexanoic acid
Haptens, 138, 154
Histocompatibility antigens
Mutation, 1323
IgG
T Lymphocytes, 517
B Lymphocytes
Haptens, 491
Lymphocyte cooperation, 517
Phosphorylcholine, 1399
Radiation chimera, 715
Spleen, mouse, 491
T Lymphocytes
Antigens, bacterial, 1033
Haptens, 507, 808
Histocompatibility antigens, 108
Immunosuppression, 44
Lymphocyte cooperation, 44, 517, 808, 1033 1399
Pregnancy, 898
Spleen, mouse, 517
B Lymphocytes
Pregnancy, 898
Phosphorylcholine
Lymphocyte cooperation, 1399
2,4,6-Trinitrophenyl-lys-Ficoll
Autoantibodies, 154
Haptens, 154
2,4,6-Trinitrophenyl-ε-amino-*n*-caproic acid 154
Virus, Friend murine leukemia
Genes, immune response, 10
Viral proteins, 10
Viremia, 10

**Antibody specificity**
*p*-Azophenylarsonate
T Lymphocytes, 909
Gangliosides
Hybrid cells, 1008
$GM_2$ ganglioside
Acetylgalactosamine, 1008
IgG, 1008
IgM, 1008
*Streptococcus* group A
Vaccines, 862
T Lymphocytes
Histocompatibility antigens, 307
Idiotypic determinants, 909
IgG, 307
*Micrococcus lysodeikticus*
Anti-antibodies, 184
Myeloma proteins
IgA, 792
Plasmacytoma

**Antibody specificity (cont'd)**
Gangliosides, 1008
Virus, tobacco mosaic
Anti-antibodies, 184

**Antigen-antibody complex**
Gamma globulins
Kidney glomerulus, 1410
Glomerulonephritis
Haptens, 1161
IgA, 1161
Monocytes, 413
Serum albumin, bovine, 413
Histocompatibility antigens
Y Chromosome, 1028
Kidney glomerulus
Immunity, cellular, 1410
Mesangium, 1410
T Lymphocytes
Kidney glomerulus, 1410
Macrophages
Acetic acid, mercapto-, 607
Complement, 607
Immunoglobulins, Fc, 607
Myeloma proteins
IgA, 1161
Serum albumin
Kidney glomerulus, 1410
Virus, Bebaru
Cytotoxicity, 166
Histocompatibility antigens, 166
Virus, influenza
Cytotoxicity, 166
Histocompatibility antigens, 166

**Antigen-antibody reactions**
Bacteriophages
Immunologic memory, 888
Collagen
Immune response genes, 646
Nude mouse, 646
Hemocyanin
Immunologic memory, 888
Immunologic memory
Allotype suppression, 888
B Lymphocytes
Lymphokines, 849
Lymphokines
Isoantigens, 849
Ovalbumin
Immunologic memory, 888
*Plasmodium knowlesi*
Erythrocytes, 86
Immunogenetics, monkey, 86

**Antigenic determinants**
Antigens, viral
Killer cells, 51
Cytochrome *c*
Amino acids, 830
Cyanogen bromide, 830
Genes, immune response
Isoantigens, 100
Immunoglobulins, Fc
B Lymphocytes, 580

**Antigenic determinants (cont'd)**
T Lymphocytes, 580
Macrophages, 580
Isoantigens
Histocompatibility antigens, 100
Kidney neoplasms
Adenocarcinoma, 564
Leukemia
T Lymphocytes, 777
B Lymphocytes
Histocompatibility antigens, 246
T Lymphocytes
Histocompatibility antigens, 246
Immune response, mouse, 830
Liposomes, 1049
Lymphocyte cooperation, 1277
Membrane proteins, 777
NZB splenocytes
Cytotoxicity, 1555
*Plasmodium falciparum*
Merozoites, 1241
Virus, AKR murine leukemia
Immunity, cellular, 51
Virus, Gross murine leukemia
Immunity, cellular, 51
Virus, Moloney murine leukemia
Immunity, cellular, 1367
Virus, Moloney murine sarcoma
Immunity, cellular, 1367

**Antigens**
Autoimmune diseases
T Lymphocytes, 31
Hematopoietic stem cells
Cell differentiation, 977
T Lymphocytes
Lymphocyte cooperation, 1510
Macrophages
Hypersensitivity, delayed, 965
*Plasmodium knowlesi*
Immunogenetics, monkey, 86
Isolation and characterization, 86

**Antigens, bacterial**
*Listeria monocytogenes*
Hypersensitivity, delayed, 1033
T Lymphocytes, 1033
T Lymphocytes
Antibody formation, 1033
Hypersensitivity, delayed, 1033

**Antigens, neoplasm**
Virus, Friend murine leukemia
Killer cells, 1174
Virus, Gross murine leukemia
Killer cells, 1174
Virus, Rauscher murine leukemia
Killer cells, 1174

**Antigens, T lymphocyte**
B Lymphocytes
Lymphocyte cooperation, 1285

**Antigens, viral**
Antigenic determinants
Killer cells, 51

**Antigens, viral (cont'd)**
Histocompatibility antigens
Killer cells, 51
T Lymphocytes
Immunity, cellular, 1049
Virus, Friend murine leukemia
Viral proteins, 10
Virus, vesicular stomatitis
Liposomes, 1049

**Antilymphocyte serum**
B Lymphocytes
Cell adhesion, 256
T Lymphocytes
Concanavalin A, 1293
Immunity, cellular, 432

**Arachidonic acid**
Chemotaxis
Metabolites, 406
Indomethacin
Metabolites, 406
Mast cells
1,2-Diacylglycerol, 1039
Neutrophils
Cell movement, 406
Chemotaxis, 406
Eicosatetranaenoic acid, mono-hydroxy-, 406
Lipoxygenases, 406
Metabolites, 406

**Autoantibodies**
Antibody formation
Inhibitory factor, 154
Spleen, mouse, 138
Erythrocytes
Age factors, 1551
B Lymphocytes, 1551
Sex-linked defect, 1551
Haptens
Antibody formation, 138
Nude mouse, 808
Histocompatibility antigens
NZB splenocytes, 1555
Lactoferrin
Immunization, 1265
T Lymphocytes
Haptens, 808
Plasma cells
IgG, 1265
Immune response, rabbit, 1265
Serum albumin
IgG, 1265
Immunization, 1265
2,4,6-Trinitrophenyl-lys-Ficoll
Antibody formation, 154
Spleen, mouse, 138

**Autograft**
*see* Transplantation, autologous

**Autoimmune disease**
Anti-antibodies
NZB/NZW mouse, 371

**Autoimmune disease (cont'd)**
Radiation, ionizing
NZB/NZW mouse, 371

**Autoimmune diseases**
IgG
Mouse, New Zealand, 31
IgM
Mouse, New Zealand, 31
B Lymphocytes
Immunogenetics, 31
X chromosome, 31
T Lymphocytes
Antigens, 31
X chromosome
Immunogenetics, 31

***p*-Azobenzenearsonate**
Anti-antibodies
Hypersensitivity, delayed, 1216, 1229
Immune tolerance, 1229
Haptens
Hypersensitivity, delayed, 1216, 1229

***p*-Azophenylarsonate**
Antibody specificity
T Lymphocytes, 909
T Lymphocytes
Suppressor cells, 909

B

**B Lymphocytes**
IgM
Histocompatibility antigens, 1075

**Bacteriophages**
Antigen-antibody reactions
Immunologic memory, 888

**Benzene, 1-fluoro-2,4-dinitro-**
T Lymphocytes
Contact sensitivity, 1432

**Benzoate**
Macrophages
Antimicrobial activity, 938

**Binding proteins**
*see* Carrier proteins

**Binding sites, antibody**
T Lymphocytes
Histocompatibility antigens, 1084
Isoantigens, 1084
Malaria
Immunization, 1241
*Plasmodium falciparum*
Erythrocytes, 1241

**Blood circulation**
Oxazolone
Lymph nodes, 218
Picryl chloride
Lymph nodes, 218

**Blood platelets**
Complement
Serotonin, 633

**Blood platelets (cont'd)**
Hematopoietic stem cells
Antigens, 977
Serotonin
Indomethacin, 633
Salicylic acid acetate, 633
Thrombin
Complement 5b-9 complex, 633
Serotonin, 633

**Blood proteins**
Complement 3b
Hemolysis, 267
Proteolysis, 267
Virus, measles
Membrane attack mechanism, 445

**Bone marrow**
Alkaline phosphatase
Fibroblasts, 919
Granulocytes, 919
Macrophages, 919
Lymphoma
Killer cells, 531
Macrophages
Plasminogen activators, 231
Mast cells
Cell differentiation, 482

**Bone resorption**
Monocytes
Prostaglandins E, 338
Osteoclasts
Monocytes, 338
Prostaglandins E, 338

C

**Carbohydrates**
*Micrococcus lysodeikticus*
Anti-antibodies, 184

**Carcinoma, clear cell**
*see* Adenocarcinoma

**Carcinoma, epidermoid**
Cholanthrene, 3-methyl-
Virus, murine leukemia, 1567
Lung neoplasms
Cholanthrene, 3-methyl-, 1567

**Cardiac output**
Oxazolone
Tissue distribution, 218
Picryl chloride
Tissue distribution, 218

**Carrier proteins**
Complement 4
Hemolysis, 267
Isolation and characterization, 267
Proteolysis, 267
Complement 3b
Proteolysis, 267
Leukemia, lymphocytic
IgG, 1067
B Lymphocytes

**Carrier proteins (cont'd)**
IgG, 1067

**Catalase**
Macrophages
Pinocytosis, 938

**Cataracts**
Crystallins
Lysine residues, glycosylated, 1098
Protein aggregates, 1098
Diabetes mellitus, experimental
Crystallins, 1098
Galactosemia
Crystallins, 1098

**Cell adhesion**
Eosinophils
Concanavalin A, 1456
Ionophore A23187, 1456
B Lymphocytes
Antilymphocyte serum, 256
Cell differentiation, 256
Endotoxins, 256
Radiation, ionizing, 256
Macrophages
Complement, 607
Immunoglobulins, Fc, 607

**Cell cycle**
Tuberculin
Lymphocyte transformation, 1339

**Cell differentiation**
Chediak-Higashi syndrome
Mast cells, 482
Granulocytes
Lactoferrin, 277
Prostaglandins E, 277
Hematopoietic stem cells
Alkaline phosphatase, 919
Antigens, 977
B Lymphocytes
Anti-antibodies, 174
Cell adhesion, 256
Fetal liver/yolk sac, mouse, 548
Hematopoietic stem cells, 548
Immune tolerance, 491
Immunogenetics, mouse, 1483
Immunoglobulins, Fc, 256
T Lymphocytes
Cytochrome *c*, 830
Histocompatibility antigens, 108
Immunogenetics, mouse, 108
Isoantigens, 777
Leukocyte pyrogen, 709
Lymphokines, 849
Macrophages, 709
Macrophages
Lactoferrin, 277
Prostaglandins E, 277
Mast cells
Bone marrow, 482
T Lymphocytes, 482
Lymphoid tissue, 482
Multiple myeloma

**Cell differentiation (cont'd)**
B Lymphocytes, 792
Neutrophils
Prostaglandins E, 277
Teratoid tumor
Reverse transcriptase, 392
Viruses, oncogenic, 392

**Cell fusion**
Virus, Semliki Forest
Membrane proteins, 1383

**Cell membrane**
Complement 3
Glycosaminoglycans, 1202
Sialic acid, 1202
T Lymphocytes
Histocompatibility antigens, 108
Mast cells
1,2-Diacylglycerol, 1039
*Streptococcus pyogenes*
Lipases, 1498

**Cell movement**
Neutrophils
Arachidonic acid, 406
Oxazolone
Lymphocytes, 218

**β Cells**
Islands of Langerhans
Histocompatibility antigens, 1

**B Cells, pancreatic**
*see* β Cells

**Chediak-Higashi syndrome**
Mast cells
Cell differentiation, 482

**Chemoreceptors**
Histocompatibility antigens
Discrimination, 755
Maze learning, 755

**Chemotaxis**
Arachidonic acid
Metabolites, 406
Neutrophils
Arachidonic acid, 406
Lipoxygenases, 406

**Cholanthrene, 3-methyl-**
Carcinoma, epidermoid
Virus, murine leukemia, 1567
Fibrosarcoma
Phosphoglycerate kinase, 878
Virus, murine leukemia, 1567
Lung neoplasms
Carcinoma, epidermoid, 1567
Fibrosarcoma, 1567

**Chromosome abnormalities**
B Lymphocytes

**Chromosome abnormalities (cont'd)**
Antibody formation, 1483
Immunoglobulins, surface, 1483
Lipopolysaccharides, 1483
X Chromosome
B Lymphocytes, 1483

**X Chromosome**
Autoimmune diseases
Immunogenetics, 31
B Lymphocytes, 31
Chromosome abnormalities
B Lymphocytes, 1483
B Lymphocytes
Immune response genes, 698

**Y Chromosome**
Histocompatibility antigens
Antigen-antibody complex, 1028
Immunity, cellular, 1028
Surface mapping, thymocytes, 1020

**Collagen**
See also Hydroxyproline
Antigen-antibody reactions
Nude mouse, 646
Fibroblasts
Inflammatory reaction, 1421
Immune response genes
Antigen-antibody reactions, 646
Nude mouse, 646
Lymphocytes
Inhibitory factor(s), 1421
Monocytes
Inhibitory factor(s), 1421
Proline, 4-hydroxy-
Fibroblasts, 1421
Inflammatory reaction, 1421
Radiation chimera
Immune response genes, 646

**Colony stimulating factor**
Macrophages
Cultured cells, mouse, 231
Fibrinolysis, 231
Lactoferrin, 277
Plasminogen activators, 231
Prostaglandins E, 277

**Complement**
Macrophages
Antigen-antibody complex, 607
Cell adhesion, 607
Thrombin
Platelet aggregation, 633
Trypsin
Platelet aggregation, 633

**Complement 3**
Glycosaminoglycans
Cell membrane, 1202
Heparin
Complement pathway, alternative, 1202
Sialic acid
Cell membrane, 1202
Zymosan
Complement pathway, alternative, 1202

**Complement 4**
Carrier proteins
Hemolysis, 267
Isolation and characterization, 267
Proteolysis, 267

**Complement 3b**
Blood proteins
Hemolysis, 267
Proteolysis, 267
Carrier proteins
Proteolysis, 267
Macrophages
Phagocytosis, 653

**Complement pathway, alternative**
Complement 3
Heparin, 1202
Zymosan, 1202

**Compound 48/80**
Mast cells
1,2-Diacylglycerol, 1039

**Concanavalin A**
Eosinophils
Cell adhesion, 1456
Methylmannosides, 1456
Lymphocytes
Macrophages, 359
T Lymphocytes
Antilymphocyte serum, 1293
Cytotoxicity, 196
DNA synthesis, 196
Isoantigens, 246, 1472
Lymphokines
T Lymphocytes, 849
Macrophages
Fibrinolysis, 231

**Contact sensitivity**
Benzene, 1-fluoro-2,4-dinitro-
T Lymphocytes, 1432
T Lymphocytes
Histocompatibility antigens, 1432
Suppressor factor, 1432

***Corynebacterium parvum***
Killer cells
Lymphoma, 531

**Crystallins**
Cataracts
Diabetes mellitus, experimental, 1098
Galactosemia, 1098
Lysine residues, glycosylated, 1098
Protein aggregates, 1098
Dithiothreitol
Protein aggregates, 1098

**Cyanogen bromide**
Cytochrome *c*
Antigenic determinants, 830
*Streptococcus* group A
Vaccines, 862

**Cyclophosphamide**
Histocompatibility antigens

**Cyclophosphamide (cont'd)**
Hypersensitivity, delayed, 965
T Lymphocytes
Dextran sulfate, 1571
Suppressor cells, 1216

**Cyclophosphamide, 4-hydroperoxy-**
T Lymphocytes
Dextran sulfate, 1571

**Cytochalasin B**
Viral proteins
Glycosylation, 379
Virus, influenza
Actin, 379
Glycoproteins, 379
Neuraminidase, 379
Virus replication, 379
Virus, vesicular stomatitis
Glycoproteins, 379
Neuraminidase, 379
Virus replication, 379

**Cytochrome *c***
Amino acids
Antigenic determinants, 830
Cyanogen bromide
Antigenic determinants, 830
T Lymphocytes
Cell differentiation, 830
Genes, immune response, 830
Histocompatibility antigens, 830

**Cytosine, 1-β-*D*-arabinofuranosyl-**
T Lymphocytes
Cytotoxicity, 196
Sarcoma, mast cell
T Lymphocytes, 196

**Cytosine arabinoside**
*see* Cytosine, 1-β-*D*-arabinofuranosyl-

**Cytotoxicity**
Virus, Bebaru
Antigen-antibody complex, 166
Histocompatibility antigens, 166
Virus, influenza
Antigen-antibody complex, 166
Histocompatibility antigens, 166

D

**Dextran sulfate**
Cyclophosphamide
T Lymphocytes, 1571
Cyclophosphamide, 4-hydroperoxy-
T Lymphocytes, 1571
T Lymphocytes
B Lymphocytes, 1571

**Diabetes mellitus, experimental**
Cataracts
Crystallins, 1098

**1,2-Diacylglycerol**
Mast cells
Cell membrane, 1039
Metabolism, 1039

**Diazabicyclooctane**
Macrophages
Antimicrobial activity, 938

**Diisopropylfluorophosphate**
Factor XII
Binding and activation, 1122

**2,4-Dinitrophenol**
B Lymphocytes
Immune tolerance, 205

**2,4-Dinitrophenyl-δ-amino-*n*-caproic acid**
Haptens
Antibody formation, 138
2,4,6-Trinitrophenyl-lys-Ficoll
Plaque assay, 138
2,4,6-Trinitrophenyl-ε-amino-*n*-caproic acid
138

**Dithiothreitol**
Lens proteins
Protein aggregates, 1098

**DNA synthesis**
T Lymphocytes
Concanavalin A, 196
Immunosuppression, 622
Isolation and characterization, inhibitory factor
622

**DNA, viral**
Teratoid tumor
Nucleic acid hybridization, 392

E

**Ear**
Oxazolone
Inflammation, 218

**Eicosatetraenoic acid, mono-hydroxy-**
Neutrophils
Arachidonic acid, 406

**Endothelium**
Islands of Langerhans
Histocompatibility antigens, 1
Transplantation, allogeneic
Microvascular injury, 322
Necrosis, 322
Transplantation, autologous
Ultrastructural study, 322

**Endotoxins**
Lymphocytes
Macrophage activating factor, 359
B Lymphocytes
Cell adhesion, 256
Macrophages
Macrophage activating factor, 359

**Eosinophils**
Concanavalin A
Cell adhesion, 1456
Methylmannosides, 1456

**Eosinophils (cont'd)**
Ionophore A23187
Cell adhesion, 1456
Protamines
Binding, 1456
Proteins
Binding, 1456
*Schistosoma mansoni*
Immune adherence, 1456

**Epithelium**
Islands of Langerhans
Histocompatibility antigens, 1

**Erythrocytes**
Autoantibodies
Age factors, 1551
B Lymphocytes, 1551
Sex-linked defect, 1551
*Plasmodium falciparum*
Binding sites, antibody, 1241
Merozoites, 1241
*Plasmodium knowlesi*
Antigen-antibody reactions, 86
Immunogenetics, monkey, 86

**Esterases**
B Lymphocytes
Immunoglobulins, Fc, 256
Proteinuria
Kidney glomerulus, 413

**Estradiol**
Histocompatibility antigens
Immune serums, 1020

F

**Factor XII**
Diisopropylfluorophosphate
Binding and activation, 1122
Kaolin
Binding and activation, 1122
Kininogens
Prekallikrein, 1122
Proteolysis, 1122
Prekallikrein
Binding and activation, 1122
Proteolysis, 1122

**Fibrinolysis**
Macrophages
Colony stimulating factor, 231
Concanavalin A, 231
Lymphokines, 231
Plasminogen activators, 231
Thioglycolates, 231

**Fibroblasts**
Alkaline phosphatase
Bone marrow, 919
Collagen
Inflammatory reaction, 1421
Proline, 4-hydroxy-
Collagen, 1421

**Fibrosarcoma**
Cholanthrene, 3-methyl-
Phosphoglycerate kinase, 878
Virus, murine leukemia, 1567
Lung neoplasms
Cholanthrene, 3-methyl-, 1567
Phosphoglycerate kinase
X Chromosome inactivation, 878
Virus, murine sarcoma
Transplantation, heterologous, 1195

G

**Galactosemia**
Cataracts
Crystallins, 1098

**Gamma globulins**
Antigen-antibody complex
Kidney glomerulus, 1410
B Lymphocytes
Immune tolerance, 205

**Gangliosides**
Hybrid cells
Antibody specificity, 1008
Plasmacytoma
Antibody specificity, 1008
Hybrid cells, 1008

**Genes, immune response**
Histocompatibility antigens
Immunoprecipitation, 100
Lymphocyte cooperation, 1293
Mutation, 1323
Radiation chimera, 1134
Hypersensitivity, delayed
(4-Hydroxy-3-nitrophenyl)acetyl, 1255
IgG
Allotype, latent, 351
Immunoglobulins, heavy chain
IgG, 307
Isoantigens
Antigenic determinants, 100
Immunoprecipitation, 100
Peptide mapping, 100
$\alpha$,$\beta$ Subunits, 100
B Lymphocytes
Lymphocyte cooperation, 20
T Lymphocytes
Cytochrome *c*, 830
Histocompatibility antigens, 1134
Hypersensitivity, delayed, 1255
IgG, 307
Lymphocyte cooperation, 20, 293
Macrophages, 1143
Muramidase
T Lymphocytes, 293
Virus, Friend murine leukemia
Antibody formation, 10
Immunity, cellular, 10
Virus, vaccinia
Radiation chimera, 1187

**Genetics**
T Lymphocytes

**Genetics (cont'd)**
Immunoglobulins, heavy chain, 44
Virus, influenza
Immune response, mouse, 117

**Glomerulonephritis**
Antigen-antibody complex
Monocytes, 413
Serum albumin, bovine, 413
Haptens
Antigen-antibody complex, 1161
IgA
Antigen-antibody complex, 1161
Monocytes
Ultrastructural study, rabbit, 413
Radiation, ionizing
Immune response, mouse, 371
NZB/NZW mouse, 371

**Glutamic acid**
T Lymphocytes
Lymphocyte cooperation, 20

**Glycoproteins**
*see also* Secretory component
Virus, influenza
Cytochalasin B, 379
Virus, vesicular stomatitis
Cytochalasin B, 379

**Glycosaminoglycans**
Complement 3
Cell membrane, 1202

**$GM_2$ ganglioside**
Acetylgalactosamine
Antibody specificity, 1008
IgG
Antibody specificity, 1008
IgM
Antibody specificity, 1008

**Graft rejection**
Histocompatibility antigens
Bone marrow, 531
Mutation, 1323
T Lymphocytes
Histocompatibility antigens, 1351
Skin
Necrosis, 322
Transplantation, allogeneic
Immunity, cellular, 322
Necrosis, 322

**Graft survival**
Immunity, passive
Kidney, 455

**Granulocytes**
Alkaline phosphatase
Bone marrow, 919
Lactoferrin
Cell differentiation, 277
Prostaglandins E
Cell differentiation, 277

**Growth substances**
T Lymphocytes

**Growth substances (cont'd)**
Cells, cultured, 1510

**H**

**$\beta$1H**
*see* Blood proteins

**Hageman factor**
*see* Factor XII

**Haptens**
Antibody formation
2,4-Dinitrophenyl-ε-amino-*n*-caproic acid, 138
Nude mouse, 808
Plaque assay, 138, 154
Spleen, mouse, 138, 154
Trinitrophenyls, 808
Autoantibodies
Antibody formation, 138
Nude mouse, 808
*p*-Azobenzenearsonate
Hypersensitivity, delayed, 1216, 1229
2,4-Dinitrophenyl-modified lymphoid cells
T Lymphocytes, 676
Glomerulonephritis
Antigen-antibody complex, 1161
Hexanoic acid
Antibody formation, 138, 154
(4-Hydroxy-3-nitrophenyl)acetyl
T Lymphocytes, 761
Hypersensitivity, delayed
Carrier effects, 1255
(4-Hydroxy-3-nitrophenyl)acetyl, 1255
Immunity, passive, 818
Immunoglobulins, heavy chain
Suppressor cells, 761
B Lymphocytes
Antibody formation, 491
Immune tolerance, 491
T Lymphocytes
Antibody formation, 507, 808
Autoantibodies, 808
Hypersensitivity, delayed, 818
IgE, 507
IgG, 507
Lymph nodes, 1432
Lymphocyte cooperation, 20
Suppressor cells, 1229
Myeloma proteins
Hypersensitivity, delayed, 818
Phosphorylcholine
Hypersensitivity, delayed, 818
2,4,6-Trinitrophenyl-lys-Ficoll
Antibody formation, 154

**Helper cells**
*see* Lymphocyte cooperation

**Hematopoietic stem cells**
Alkaline phosphatase
Cell differentiation, 919
Antigens
Cell differentiation, 977
B Lymphocytes
Cell differentiation, 548

**Hematopoietic stem cells (cont'd)**
Teratoid tumor
Viruses, oncogenic, 392

**Hemocyanin**
Antigen-antibody reactions
Immunologic memory, 888

**Hemolysis**
Complement 4
Carrier proteins, 267
Complement 3b
Blood proteins, 267

**Heparin**
Complement 3
Complement pathway, alternative, 1202
Cyanogen bromide
Complement 3B inactivators, 1202

**Hexanoic acid**
Haptens
Antibody formation, 138, 154

**Histamine**
Adenosine cyclic-3',5'-monophosphate
Lymphocytes, 1260
Lymphocytes
Binding sites, 1260

**Histidine**
Macrophages
Antimicrobial activity, 938

**Histocompatibility antigens**
Anemia, aplastic
IgM, 1075
Immunity, cellular, 1075
Antigen-antibody complex
Cell membrane, 1028
Antigens, viral
Killer cells, 51
Autoantibodies
NZB splenocytes, 1555
B Lymphocytes
IgM, 1075
Chemoreceptors
Discrimination, 755
Maze learning, 755
Y Chromosome
Antigen-antibody complex, 1028
Immune serums, 1020
Immunity, cellular, 1028
Surface mapping, thymocytes, 1020
Genes, immune response
Immunoprecipitation, 100
Lymphocyte cooperation, 1293
Mutation, 1323
Radiation chimera, 1134
Hypersensitivity, delayed
Immune response, mouse, 965
IgM
Antibody-dependent cell cytotoxicity, 1075
Immune serums
Antigen-antibody complex, 1028
Immunity, cellular
Haplotype, mouse, 1001

**Histocompatibility antigens (cont'd)**
Islands of Langerhans
Cell distribution, 1
$\beta$ Cells, 1
Endothelium, 1
Epithelium, 1
Immunoferritin labeling, 1
Pancreas, mouse, 1
Isoantigens
Antigenic determinants, 100
Killer cells
Immunity, cellular, 1134
Lymphocyte cooperation
Immune response, mouse, 293
Immunity, cellular, 1134
B Lymphocytes
Antigenic determinants, 246
Lymphocyte cooperation, 44
T Lymphocytes
Antibody formation, 108
Antibody specificity, 307
Antigenic determinants, 246
Balb/c cells, 1555
Binding sites, antibody, 1084
Cell differentiation, 108
Cell membrane, 108
Contact sensitivity, 1432
Cytochrome *c*, 830
Cytotoxicity, 1549
Genes, immune response, 1134
Graft rejection, 1351
Hypersensitivity, delayed, 965
Immune response, 293, 1271
Immune response genes, 646
Immune tolerance, 1001
Immunity, cellular, 1001, 1049, 1134
Immunogenetics, mouse, 108
Immunoglobulins, heavy chain, 1084
Immunosuppression, 44
Leukocyte culture test, mixed, 1108, 1520
Lymphocyte cooperation, 44, 108, 646, 1277
Lymphocyte transformation, 1520
Macrophages, 1143
Virus, Epstein-Barr, 1310
Lymphoma
Killer cells, 531
T Lymphocytes, 531
Monocytes
Lymphocyte cooperation, 1271
Mutation
Antibody formation, 1323
Graft rejection, 1323
Lymphocyte cooperation, 1323
Olfactory perception
Mating preference, 755
*Staphylococcus aureus*
Peptide mapping, 100
Transplantation, allogeneic
Immunity, cellular, 465
Virus, AKR murine leukemia
Immunity, cellular, 51
Virus, Bebaru
Antigen-antibody complex, 166

**Histocompatibility antigens (cont'd)**
Cytotoxicity, 166
T Lymphocytes, 166
Virus, ectromelia
T Lymphocytes, 166
Virus, Epstein-Barr
Immunity, cellular, 1310
Virus, Friend murine leukemia
Immunity, cellular, 1174
Virus, Gross murine leukemia
Immunity, cellular, 51, 1174
Virus, influenza
Antigen-antibody complex, 166
Cytotoxicity, 166
T Lymphocytes, 166
Virus, Rauscher murine leukemia
Immunity, cellular, 1174
Virus, vaccinia
T Lymphocytes, 1187

**Histocompatibility gene complex**
IgG
Lymphocyte cooperation, 715
IgM
Lymphocyte cooperation, 715
B Lymphocytes
Adaptive differentiation, 715
T Lymphocytes
Hypersensitivity, delayed, 676
Radiation chimera, 715
Virus, vaccinia
T Lymphocytes, 693

**Hybrid cells**
Gangliosides
Antibody specificity, 1008
IgM
Genetics, mouse, 698
Plasmacytoma
Gangliosides, 1008
IgG, 580
IgM, 698
Immunoglobulins, Fab, 580

**Hydrogen peroxide**
*Toxoplasma gondii*
Macrophages, 938, 950

**Hydroxides**
*Toxoplasma gondii*
Macrophages, 938, 950

**Hyperemia**
Oxazolone
Immune response, mouse, 218
Lymph nodes, 218
Lymphocytes, 218

**Hypersensitivity, delayed**
*p*-Azobenzenearsonate
Anti-antibodies, 1216, 1229
Genes, immune response
(4-Hydroxy-3-nitrophenyl)acetyl, 1255
*Streptococcus* group A
Vaccines, 862
Haptens
*p*-Azobenzenearsonate, 1216, 1229
Carrier effects, 1255
(4-Hydroxy-3-nitrophenyl)acetyl, 1255
Immunity, passive, 818
Phosphorylcholine, 818
Histocompatibility antigens
Immune response, mouse, 965
Immunoglobulins, heavy chain
Suppressor cells, 1216
*Listeria monocytogenes*
Antigens, bacterial, 1033
T Lymphocytes
Antigens, bacterial, 1033
Genes, immune response, 1255
Haptens, 818
Histocompatibility antigens, 965
Histocompatibility gene complex, 676
Idiotype-specific reactivities, 818
Induction and suppression, 676
Suppressor cells, 818
Macrophages
Antigens, 965
Myeloma proteins
Haptens, 818

## I

**Idiotypic determinants**
T Lymphocytes
Immunoglobulins, heavy chain, 307

**IgA**
Binding sites
Hepatocytes, rat, 1538
Glomerulonephritis
Antigen-antibody complex, 1161
Multiple myeloma
Idiotypic determinants, 792
Immunoglobulins, light chain, 792
Myeloma proteins
Antibody specificity, 792
Antigen-antibody complex, 1161
Receptors, immunoglobulin
Hepatocytes, rat, 1577
Secretory component, 1577
Secretory component
Epithelial cells, intestines, 1538
Hepatocytes, rat, 1538

**IgE**
B Lymphocytes
T Lymphocytes, 507
T Lymphocytes
Haptens, 507
Lymphocyte cooperation, 507

**IgG**
Allotype, latent
Radioimmunoassay, mouse serum, 351
Antibody formation
T Lymphocytes, 517
Autoimmune diseases

**IgG (cont'd)**
Mouse, New Zealand, 31
Genes, immune response
Allotype, latent, 351
$GM_2$ ganglioside
Antibody specificity, 1008
Histocompatibility gene complex
Lymphocyte cooperation, 715
Immunoglobulins, Fab
Cytolytic alternative pathway, 445
Immunoglobulins, heavy chain
Genes, immune response, 307
Leukemia, lymphocytic
Carrier proteins, 1067
Immunoglobulins, Fc, 1067
B Lymphocytes
Anti-antibodies, 174
Carrier proteins, 1067
Genetics, mouse, 174
Immunoglobulins, Fc, 580
Tuberculin, 1339
T Lymphocytes
Antibody specificity, 307
Genes, immune response, 307
Haptens, 507
Immunoglobulins, Fc, 580
Immunoglobulins, heavy chain, 307
Immunosuppression, 174
Lymphocyte cooperation, 174, 507, 646
Receptors, prostaglandin, 1260
Macrophages
Immunoglobulins, Fc, 580
Plasma cells
Autoantibodies, 1265
Plasmacytoma
Hybrid cells, 580
Serum albumin
Autoantibodies, 1265
Transplantation, allogeneic
Lymphotoxins, 465
Virus, measles
Immunoglobulins, Fab, 445

**IgM**
Anemia, aplastic
Histocompatibility antigens, 1075
Immune serums, 1075
Autoimmune diseases
Mouse, New Zealand, 31
B Lymphocytes
Histocompatibility antigens, 1075
$GM_2$ ganglioside
Antibody specificity, 1008
Histocompatibility antigens
Antibody-dependent cell cytotoxicity, 1075
Histocompatibility gene complex
Lymphocyte cooperation, 715
Hybrid cells
Genetics, mouse, 698
B Lymphocytes
Anti-antibodies, 174
B Lymphocytes
Spleen cells, pregnant mouse, 898
Plasmacytoma
Hybrid cells, 698
Tuberculin
Immunoglobulins, surface, 1339

**Immune adherence**
Eosinophils
*Schistosoma mansoni*, 1456
Neutrophils
*Schistosoma mansoni*, 1456

**Immune complex**
*see* Antigen-antibody complex

**Immune response genes**
Collagen
Antigen-antibody reactions, 646
Nude mouse, 646
Killer cells
*Lyt-2* gene, 432
Cortisol acetate, 531
Cyclophosphamide, 531
Polycytidylic-polyinosinic acid, 531
Spleen cells, nude mouse, 531
B Lymphocytes
Genetics, mouse, 698
X Chromosome, 698
T Lymphocytes
Histocompatibility antigens, 646
Killer cells, 432

**Immune serums**
Anemia, aplastic
Antibody-dependent cell cytotoxicity, 1075
IgM, 1075
Histocompatibility antigens
Antibody-dependent cell cytotoxicity, 1075
IgM
Histocompatibility antigens, 1075
Inflammation
Amyloid, 597
Killer cells
Induction and activation, spleen, mouse, 426
Leukemia, radiation-induced
Killer cells, 426
Lipopolysaccharides
Amyloid, 597
Myeloma proteins
Idiotype-specific reactivities, 818
*Neisseria meningitidis*
Antibacterial activity, 127
Polysaccharides, 127

**Immune tolerance**
*p*-Azobenzenearsonate
Anti-antibodies, 1229
B Lymphocytes
Cell differentiation, 491
2,4-Dinitrophenol, 205
Gamma globulins, 205
Haptens, 491
T Lymphocytes
Histocompatibility antigens, 1001
Precursor cells, 1351
Thymus gland
Transplantation, homologous, 1351

**Immune tolerance (cont'd)**
Transplantation, homologous
Mouse, nude, 1351

**Immunity, cellular**
Anemia, aplastic
Histocompatibility antigens, 1075
Antigen-antibody complex
Kidney glomerulus, 1410
Histocompatibility antigens
Y Chromosome, 1028
Haplotype, mouse, 1001
Killer cells, 1134
Lymphocyte cooperation, 1134
Infectious mononucleosis
T Lymphocytes, 1310
Kidney
Transplantation, allogeneic, 455, 465
Leukemia
Virus, AKR murine leukemia, 51
Virus, Gross murine leukemia, 51
T Lymphocytes
Anti-antibodies, 1310
Antigens, viral, 1049
Antilymphocyte serum, 432
Histocompatibility antigens, 1001, 1049, 1134
Isoantibodies, 432
VIrus, murine cytomegalo, 1549
Transplantation, allogeneic
Graft rejection, 322
Histocompatibility antigens, 465
T Lymphocytes, 465
Virus, AKR murine leukemia
Antigenic determinants, 51
Histocompatibility antigens, 51
T Lymphocytes, 51
Virus, Epstein-Barr
Histocompatibility antigens, 1310
Virus, Friend murine leukemia
Genes, immune response, 10
Histocompatibility antigens, 1174
Virus, Gross murine leukemia
Antigenic determinants, 51
Histocompatibility antigens, 51, 1174
T Lymphocytes, 51
Virus, influenza
Lymphocyte cooperation, 1277
Virus, Moloney murine leukemia
Antigenic determinants, 1367
T Lymphocytes, 1367
Virus, Moloney murine sarcoma
Antigenic determinants, 1367
Virus, Rauscher murine leukemia
Histocompatibility antigens, 1174
Virus, Semliki Forest
Membrane proteins, 1383
Virus, Sendai
Lymphocyte cooperation, 1277

**Immunity, passive**
Haptens
Hypersensitivity, delayed, 818
Kidney
Graft survival, 455
Transplantation, allogeneic, 465

**Immunity, passive (cont'd)**
T Lymphocytes
Lymphocyte cooperation, 20

**Immunization**
Lactoferrin
Autoantibodies, 1265
*Listeria monocytogenes*
Lymphocyte cooperation, 1033
Malaria
Binding sites, antibody, 1241
Serum albumin
Autoantibodies, 1265
*Toxoplasma gondii*
Macrophages, 950

**Immunogenetics**
T Lymphocytes
Histocompatibility antigens, 108

**Immunogenetics, mouse**
T Lymphocytes
Cell differentiation, 108

**Immunoglobulins, Fab**
IgG
Cytolytic alternative pathway, 445
Plasmacytoma
Hybrid cells, 580
Virus, measles
IgG, 445

**Immunoglobulins, Fc**
Leukemia, lymphocytic
IgG, 1067
B Lymphocytes, 1067
B Lymphocytes
Cell differentiation, 256
Esterases, 256
IgG, 580
Spleen, mouse, 256
T Lymphocytes
IgG, 580
Macrophages
Antigen-antibody complex, 607
Binding sites, mouse, 721
Cell adhesion, 607
IgG, 580
Phagocytosis, 653

**Immunoglobulins, heavy chain**
Haptens
Suppressor cells, 761
Hypersensitivity, delayed
Suppressor cells, 1216
IgG
Genes, immune response, 307
B Lymphocytes
Idiotypic determinants, 1216
Lymphocyte cooperation, 44
T Lymphocytes
Genetics, 44
Histocompatibility antigens, 1084
Idiotypic determinants, 307, 1216, 1229
IgG, 307
Suppressor cells, 1229
Myeloma proteins

**Immunoglobulins, heavy chain (cont'd)**
Macrophages, 721

**Immunoglobulins, light chain**
Multiple myeloma
IgA, 792

**Immunoglobulins, surface**
Chromosome abnormalities
B Lymphocytes, 1483
B Lymphocytes
Clonal abortion, 205
Lymphocyte cooperation, 205
Tuberculin, 1339
T Lymphocytes
Lymphocyte cooperation, 205
Tuberculin
IgM, 1339

**Immunologic deficiency syndromes**
B Lymphocytes
Genetics, mouse, 1285
Phosphorylcholine, 1399
Radiation chimera, 1285

**Immunologic memory**
Antigen-antibody reactions
Allotype suppression, 888
Bacteriophages
Antigen-antibody reactions, 888
Hemocyanin
Antigen-antibody reactions, 888
Ovalbumin
Antigen-antibody reactions, 888

**Immunosuppression**
B Lymphocytes
Anti-antibodies, 174
T Lymphocytes
Antibody formation, 44
DNA replication, 622
Histocompatibility antigens, 44
IgG, 174
Lymphocyte cooperation, 507
Muramidase, 293

**Indomethacin**
Arachidonic acid
Metabolites, 406
Lymphocyte cooperation
Osteoclast-activating factor, 338
Macrophages
Prostaglandins E, 277

**Infectious mononucleosis**
T Lymphocyte
Immune response, 1448
B Lymphocytes
Lymphocyte culture test, mixed, 1448
T Lymphocytes
Immunity, cellular, 1310

**Inflammation**
Immune serums
Amyloid, 597
Oxazolone
Ear, 218

**Interferon**
Killer cells
Induction and activation, spleen, mouse, 426
VIrus, murine cytomegalo
Killer cells, 1549

**Ionophore A23187**
Eosinophils
Cell adhesion, 1456

**Islands of Langerhans**
Endothelium
Histocompatibility antigens, 1
Epithelium
Histocompatibility antigens, 1
Histocompatibility antigens
Cell distribution, 1
$\beta$ Cells, 1
Immunoferritin labeling, 1
Pancreas, mouse, 1

**Isoantibodies**
T Lymphocytes
Immunity, cellular, 432

**Isoantigens**
Genes, immune response
Antigenic determinants, 100
Immunoprecipitation, 100
Peptide mapping, 100
$\alpha$,$\beta$ Subunits, 100
Histocompatibility antigens
Antigenic determinants, 100
Leukemia
T Lymphocytes, 777
T Lymphocytes
Binding sites, antibody, 1084
Cell differentiation, 777
Concanavalin A, 246, 1472
Isolation and characterization, 777
Lymphocyte cooperation, 1108, 1293
Lymphocyte culture test, mixed, 246, 1472
Lymphocyte transformation, 246
Plant agglutinins, 246, 1472
Tetanus toxoid, 246
Tuberculin, 246
Lymphokines
Antigen-antibody reactions, 849
*Staphylococcus aureus*
Peptide mapping, 100
Tetanus toxoid
T Lymphocytes, 1472

## K

**Kaolin**
Factor XII
Binding and activation, 1122

**Kidney**
Immunity, passive
Graft survival, 455
Transplantation, allogeneic, 465
Transplantation, allogeneic
Immunity, cellular, 455, 465
Immunogeneic passenger cells, 465

**Kidney glomerulus**
Antigen-antibody complex
Immunity, cellular, 1410
Mesangium, 1410
Gamma globulins
Antigen-antibody complex, 1410
T Lymphocytes
Antigen-antibody complex, 1410
Proteinuria
Esterases, 413
Serum albumin
Antigen-antibody complex, 1410

**Kidney neoplasms**
Adenocarcinoma
Antigenic determinants, 564
Antigens
Cell membrane, 564

**Killer cells**
Antigens, viral
Antigenic determinants, 51
Histocompatibility antigens, 51
*Corynebacterium parvum*
Lymphoma, 531
Histocompatibility antigens
Immunity, cellular, 1134
Hybrid cells
Specificity/xenogeneic reactivity, 471
Immune response genes
*Lyt-2* gene, 432
Immune serums
Induction and activation, spleen, mouse, 426
Interferon
Induction and activation, spleen, mouse, 426
Leukemia, radiation-induced
Immune serums, 426
Tumor necrosis serum, 426
T Lymphocytes
Immune response genes, 432
Lymphocyte cooperation, 426
Lymphoma
Bone marrow, 531
Histocompatibility antigens, 531
Spleen cells, nude mouse, 531
Membrane proteins
Target cell binding, 471
*Neisseria meningitidis*
K Lymphocytes, 127
Strontium radioisotopes
Lymphoma, 531
Tumor necrosis serum
Induction and activation, spleen, mouse, 426
Virus, AKR murine leukemia
T Lymphocytes, 51
Virus, Friend murine leukemia
Antigens, neoplasm, 1174
Virus, Gross murine leukemia
Antigens, neoplasm, 1174
T Lymphocytes, 51
VIrus, murine cytomegalo
Interferon, 1549
Virus, Rauscher murine leukemia
Antigens, neoplasm, 1174

**Kininogens**
Factor XII
Proteolysis, 1122
Hageman factor
Prekallikrein, 1122

**Kupffer cells**
Virus, influenza
Radiation chimera, 117

L

**L cells**
Killer cells
Specificity/xenogeneic reactivity, 471

**Lactoferrin**
Granulocytes
Cell differentiation, 277
Immunization
Autoantibodies, 1265
Macrophages
Cell differentiation, 277
Colony stimulating factor, 277

***Leishmania enriettii***
Lymphocytes
Macrophage activating factor, 359
Macrophages
Macrophage activating factor, 359

**Lens proteins**
*see* Crystallins

**Leukemia**
T Lymphocytes
Antigenic determinants, 777
Isoantigens, 777
Virus, AKR murine leukemia
Immunity, cellular, 51
Virus, Gross murine leukemia
Immunity, cellular, 51

**Leukemia, lymphoblastic**
Killer cells
Specificity/xenogeneic reactivity, 471

**Leukemia, lymphocytic**
IgG
Carrier proteins, 1067
Immunoglobulins, Fc, 1067
B Lymphocytes
Immunoglobulins, Fc, 1067

**Leukemia, myelocytic**
Killer cells
Specificity/xenogeneic reactivity, 471

**Leukemia, radiation-induced**
Immune serums
Killer cells, 426
Killer cells
Tumor necrosis serum, 426

**Leukocyte culture test, mixed**
T Lymphocytes
Histocompatibility antigens, 1108
Virus, Gross murine leukemia
T Lymphocytes, 1174

**Leukocyte pyrogen**
T Lymphocytes
Cell differentiation, 709
Lymphocyte activating factor, 709

**Leukocytes, polymorphonuclear**
Neutrophils
*Rickettsia tsutsugamushi*, 703

**Lipases**
*Streptococcus pyogenes*
Cell membrane, 1498

**Lipopolysaccharides**
Amyloid
Immune serums, 597
Chromosome abnormalities
B Lymphocytes, 1483
B Lymphocytes
Cyclophosphamide, 4-hydroperoxy-, 1571
Lymphocyte cooperation, 1285
T Lymphocytes
Cyclophosphamide, 4-hydroperoxy-, 1571
Receptors, antigen, 1520

**Liposomes**
T Lymphocytes
Antigenic determinants, 1049
Virus, vesicular stomatitis
Antigens, viral, 1049
T Lymphocytes, 1049
Membrane proteins, 1049

**Lipoteichoic acid**
*Streptococcus pyogenes*
Enzymatic deacylation, 1498

**Lipoxygenases**
Neutrophils
Arachidonic acid, 406
Chemotaxis, 406

***Listeria monocytogenes***
Antigens, bacterial
Hypersensitivity, delayed, 1033
T Lymphocytes, 1033
Immunization
Lymphocyte cooperation, 1033
T Lymphocytes
Macrophage activation, 1143

**Liver**
Culture media
Suppressor cells, 1359
T Lymphocytes
Suppressor cells, 1359

**Lung neoplasms**
Carcinoma, epidermoid
Cholanthrene, 3-methyl-, 1567
Fibrosarcoma
Cholanthrene, 3-methyl-, 1567

**Lymph nodes**
Hyperemia
Oxazolone, 218
T Lymphocytes
Haptens, 1432
Oxazolone
Blood circulation, 218
Picryl chloride
Blood circulation, 218

**Lymphocyte cooperation**
Glutamic acid
T Lymphocytes, 20
Histocompatibility antigens
Genes, immune response, 1293
Immune response, mouse, 293
Immunity, cellular, 1134
Mutation, 1323
Histocompatibility gene complex
IgG, 715
IgM, 715
Indomethacin
Osteoclast-activating factor, 338
*Listeria monocytogenes*
Immunization, 1033
B Lymphocytes
Antibody formation, 517
Antigens, T lymphocyte, 1285
Genes, immune response, 20
Histocompatibility antigens, 44
Immunoglobulins, heavy chain, 44
Immunoglobulins, surface, 205
Lipopolysaccharides, 1285
Polyvinyl pyrrolidine, 1285
T Lymphocytes
Antibody formation, 44, 517, 808, 1033 1399
Antigenic determinants, 1277
Antigens, 1510
Genes, immune response, 20, 293
Genetics, mouse, 174
Haptens, 20
Histocompatibility antigens, 44, 108, 646 1277
Idiotype production, 1399
IgE, 507
IgG, 174, 507, 646
Immunity, passive, 20
Immunoglobulins, surface, 205
Immunosuppression, 507
Isoantigens, 1108, 1293
Killer cells, 426
Macrophages, 653
Muramidase, 293
Phagocytosis, 653
Lysine
T Lymphocytes, 20
Monocytes
Histocompatibility antigens, 1271
Phosphorylcholine
Antibody formation, 1399
Plant agglutinins
Osteoclast-activating factor, 338
Tyrosine
T Lymphocytes, 20
Virus, influenza
Immunity, cellular, 1277
Virus, Sendai
Immunity, cellular, 1277

**Lymphocyte depletion**
B Lymphocytes
Bone marrow reconstitution, 548

**Lymphocyte transformation**
B Lymphocytes
Tuberculin, 1339
T Lymphocytes
Histocompatibility antigens, 1520
Isoantigens, 246
Tuberculin
Cell cycle, 1339

**Lymphocytes**
Collagen
Inhibitory factor(s), 1421
Concanavalin A
Macrophages, 359
Endotoxins
Macrophage activating factor, 359
Histamine
Adenosine cyclic-3′,5′-monophosphate, 1260
Binding sites, 1260
Hyperemia
Oxazolone, 218
*Leishmania enriettii*
Macrophage activating factor, 359
Macrophage activating factor
Spleen, mouse, 359
Oxazolone
Cell movement, 218
Prostaglandins E
Adenosine cyclic-3′,5′-monophosphate, 1260
Binding sites, 1260

**B Lymphocytes**
Anti-antibodies
Cell differentiation, 174
Immunosuppression, 174
Antibody formation
Lymphocyte cooperation, 517
Radiation chimera, 715
Spleen, mouse, 491
Antigens, T lymphocyte
Lymphocyte cooperation, 1285
Antilymphocyte serum
Cell adhesion, 256
Autoimmune diseases
Immunogenetics, 31
X Chromosome, 31
Cell adhesion
Cell differentiation, 256
Cell differentiation
Fetal liver/yolk sac, mouse, 548
Immunogenetics, mouse, 1483
Radiation chimera, 548
Chromosome abnormalities
Antibody formation, 1483
Immunoglobulins, surface, 1483
Lipopolysaccharides, 1483
X Chromosome, 1483
2,4-Dinitrophenol
Immune tolerance, 205
Endotoxins
Cell adhesion, 256

**B Lymphocytes (cont'd)**
Erythrocytes
Autoantibodies, 1551
Gamma globulins
Immune tolerance, 205
Genes, immune response
Lymphocyte cooperation, 1293
Haptens
Antibody formation, 491
Immune tolerance, 491
Hematopoietic stem cells
Cell differentiation, 548
Histocompatibility antigens
Antigenic determinants, 246
Histocompatibility gene complex
Adaptive differentiation, 715
IgG
Anti-antibodies, 174
Carrier proteins, 1067
Genetics, mouse, 174
Immunoglobulins, Fc, 580
IgM
Anti-antibodies, 174
Spleen cells, pregnant mouse, 898
Immune response genes
Genetics, mouse, 698
X Chromosome, 698
Immune tolerance
Cell differentiation, 491
Immunoglobulins, Fc
Cell differentiation, 256
Esterases, 256
Spleen, mouse, 256
Immunoglobulins, heavy chain
Idiotypic determinants, 1216
Lymphocyte cooperation, 44
Immunoglobulins, surface
Clonal abortion, 205
Lymphocyte cooperation, 205
Immunologic deficiency syndromes
Genetics, mouse, 1285
Phosphorylcholine, 1399
Radiation chimera, 1285
Infectious mononucleosis
Lymphocyte culture test, mixed, 1448
Leukemia, lymphocytic
Immunoglobulins, Fc, 1067
Lipopolysaccharides
Cell differentiation, 491
Lymphocyte cooperation, 1285
Lymphocyte cooperation
Genes, immune response, 20
Histocompatibility antigens, 44
Lymphocyte depletion
Bone marrow reconstitution, 548
T Lymphocytes
Dextran sulfate, 1571
IgE, 507
Lymphokines
Antigen-antibody reactions, 849
Immune response, 849
Multiple myeloma
Cell differentiation, 792
T Lymphocytes, 792
Phosphorylcholine

**B Lymphocytes (cont'd)**
Antibody formation, 1399
Polyvinyl pyrrolidine
Lymphocyte cooperation, 1285
Pregnancy
Antibody formation, 898
Radiation chimera
Adaptive differentiation, 715
Karyotyping, 548
Radiation, ionizing
Cell adhesion, 256
Trinitrobenzenesulfonic acid
Immune tolerance, 491
Tuberculin
Cell differentiation, 491
IgG, 1339
Immunoglobulins, surface, 1339
Lymphocyte transformation, 1339
**T Lymphocytes**
Anti-antibodies
Immunity, cellular, 1310
Suppressor cells, 1216
Antibody formation
IgG, 517
Immunosuppression, 44
Lymphocyte cooperation, 44, 517, 808, 1033 1399
Spleen, mouse, 517
Antibody specificity
Idiotypic determinants, 909
Antigen-antibody complex
Kidney glomerulus, 1410
Antigenic determinants
Immune response, mouse, 830
Lymphocyte cooperation, 1277
Antigens
Lymphocyte cooperation, 1510
Antigens, bacterial
Antibody formation, 1033
Hypersensitivity, delayed, 1033
Antigens, viral
Immunity, cellular, 1049
Antilymphocyte serum
Concanavalin A, 1293
Immunity, cellular, 432
Autoimmune diseases
Antigens, 31
*p*-Azophenylarsonate
Antibody specificity, 909
Suppressor cells, 909
Balb/c cells
Cytotoxicity, 1555
Benzene, 1-fluoro-2,4-dinitro-
Contact sensitivity, 1432
Cell differentiation
Immunogenetics, mouse, 108
Cell membrane
Histocompatibility antigens, 108
Concanavalin A
Cytotoxicity, 196
DNA synthesis, 196
Isoantigens, 246, 1472
Contact sensitivity
Suppressor factor, 1432
**T Lymphocytes (cont'd)**
Cyclophosphamide
Dextran sulfate, 1571
Suppressor cells, 1216
Cyclophosphamide, 4-hydroperoxy-
Dextran sulfate, 1571
Cytochrome c
Cell differentiation, 830
Genes, immune response, 830
Histocompatibility antigens, 830
Cytosine, 1-$\beta$-D-arabinofuranosyl-
Cytotoxicity, 196
DNA replication
Immunosuppression, 622
Isolation and characterization, inhibitory factor 622
Genes, immune response
Hypersensitivity, delayed, 1255
Glutamic acid
Lymphocyte cooperation, 20
Growth substances
Cells, cultured, 1510
Haptens
Antibody formation, 507, 808
Autoantibodies, 808
(4-Hydroxy-3-nitrophenyl)acetyl, 761
Hypersensitivity, delayed, 818
IgE, 507
IgG, 507
Lymphocyte cooperation, 20
Suppressor cells, 1229
Hematopoietic stem cells
Antigens, 977
Histocompatibility antigens
Antibody formation, 108
Antibody specificity, 307
Antigenic determinants, 246
Balb/c cells, 1555
Binding sites, antibody, 1084
Cell differentiation, 108
Contact sensitivity, 1432
Cytotoxicity, 1549
Genes, immune response, 1134
Graft rejection, 1351
Hypersensitivity, delayed, 965
Immune response, 293, 1271
Immune response genes, 646
Immune tolerance, 1001
Immunity, cellular, 1001, 1049, 1134
Immunogenetics, mouse, 108
Immunoglobulins, heavy chain, 1084
Leukocyte culture test, mixed, 1108, 1520
Lymphocyte cooperation, 108, 646, 1277
Lymphocyte transformation, 1520
Histocompatibility gene complex
Radiation chimera, 715
Hypersensitivity, delayed
Histocompatibility gene complex, 676
Idiotype-specific reactivities, 818
Induction and suppression, 676
Suppressor cells, 818
IgE
Lymphocyte cooperation, 507
IgG

**T Lymphocytes (cont'd)**
Antibody specificity, 307
Genes, immune response, 307
Immunoglobulins, Fc, 580
Immunoglobulins, heavy chain, 307
Immunosuppression, 174
Lymphocyte cooperation, 174, 507, 646
Receptors, prostaglandin, 1260
Immune tolerance
Precursor cells, 1351
Immunity, cellular
Virus, murine cytomegalo, 1549
Immunity, passive
Lymphocyte cooperation, 20
Immunoglobulins, heavy chain
Genetics, 44
Idiotypic determinants, 307, 1216, 1229
Suppressor cells, 1229
Immunoglobulins, surface
Lymphocyte cooperation, 205
Immunosuppression
Histocompatibility antigens, 44
Infectious mononucleosis
Immune response, 1448
Immunity, cellular, 1310
Isoantibodies
Immunity, cellular, 432
Kidney, 455
Isoantigens
Binding sites, antibody, 1084
Cell differentiation, 777
Isolation and characterization, 777
Lymphocyte cooperation, 1108, 1293
Lymphocyte culture test, mixed, 246, 1472
Lymphocyte transformation, 246
Killer cells
Immune response genes, 432
Lymphocyte cooperation, 426
Leukemia
Antigenic determinants, 777
Isoantigens, 777
Leukocyte culture test, mixed
Suppressor cells, 1108
Leukocyte pyrogen
Cell differentiation, 709
Lymphocyte activating factor, 709
Lipopolysaccharides
Receptors, antigen, 1520
Liposomes
Antigenic determinants, 1049
*Listeria monocytogenes*
Antigens, bacterial, 1033
Macrophage activation, 1143
Lymph nodes
Haptens, 1432
Lymphocyte cooperation
Genes, immune response, 20, 293
Genetics, mouse, 174
Histocompatibility antigens, 44
Idiotype production, 1399
Immunosuppression, 507
Lymphocyte depletion
Antibody formation, 808
B Lymphocytes

**T Lymphocytes (cont'd)**
Dextran sulfate, 1571
IgE, 507
Lymphokines
Cell differentiation, 849
Concanavalin A, 849
Immune response, 849
Isolation and characterization, inhibitory factor 622
Lymphoma
Histocompatibility antigens, 531
Lysine
Lymphocyte cooperation, 20
Macrophages
Antigen recognition, 709
Binding, 1143
Cell differentiation, 709
Genes, immune response, 1143
Histocompatibility antigens, 1143
Lymphocyte cooperation, 653
Mast cells
Cell differentiation, 482
Membrane proteins
Antigenic determinants, 777
Mannose, 777
Mitogens
Hemolytic plaque assay, 987
Mitomycin C
Multiple myeloma
B Lymphocytes, 792
Receptors, antigen, 1520
Muramidase
Genes, immune response, 293
Immunosuppression, 293
Lymphocyte cooperation, 293
Peptides, 293
*Neisseria meningitidis*
Antibacterial activity, 127
Antibody-dependent cell cytotoxicity, 127
Killer cells, 127
NZB splenocytes
Cytotoxicity, 1555
Phagocytosis
Lymphocyte cooperation, 653
Plant agglutinins
Cytotoxicity, 196
Isoantigens, 244, 1472
Pregnancy
Antibody formation, 898
Prostaglandins E
Adenosine cyclic-3′,5′-monophosphate, 1260
Radiation chimera
Immune tolerance, 1187
Receptors, antigen
Cells, cultured, 1510
Sarcoma, mast cell
Cytosine, 1-β-D-arabinofuranosyl-, 196
Cytotoxicity, 196
Suppressor cells
Cytotoxicity, 1359
Idiotypic determinants, 761
Liver, 1359
Lymphocyte culture test, mixed, 1359
Spleen, 1359

**T Lymphocytes (cont'd)**
Tetanus toxoid
Isoantigens, 246, 1472
Transplantation, allogeneic
Immunity, cellular, 465
Tuberculin
Immune response, 1271
Isoantigens, 246
Tyrosine
Lymphocyte cooperation, 20
Virus, AKR murine leukemia
Immunity, cellular, 51
Killer cells, 51
Virus, Bebaru
Histocompatibility antigens, 166
Virus, ectromelia
Histocompatibility antigens, 166
Virus, Epstein-Barr
Anti-antibodies, 1310
Histocompatibility antigens, 1310
Virus, Gross murine leukemia
Immunity, cellular, 51
Killer cells, 51
Leukocyte culture test, mixed, 1174
Virus, influenza
Cytotoxicity, 1277
Histocompatibility antigens, 166
Virus, Moloney murine leukemia
Immunity, cellular, 1367
Virus activation, 1367
Virus, Moloney murine sarcoma
Virus activation, 1367
VIrus, murine cytomegalo
Cytotoxicity, 1549
Virus, Sendai
Cytotoxicity, 1277
Virus, vaccinia
Histocompatibility antigens, 1187
Histocompatibility gene complex, 693
Radiation chimera, 1187
Thymus-reconstituted nude mouse, 693
Virus, vesicular stomatitis
Liposomes, 1049

**Lymphoid tissue**
Mast cells
Cell differentiation, 482

**Lymphokines**
Concanavalin A
T Lymphocytes, 849
Isoantigens
Antigen-antibody reactions, 849
B Lymphocytes
Antigen-antibody reactions, 849
T Lymphocytes
Cell differentiation, 849
Isolation and characterization, inhibitory factor 622
Macrophages
Fibrinolysis, 231

**Lymphoma**
*Corynebacterium parvum*
Killer cells, 531

**Lymphoma (cont'd)**
Histocompatibility antigens
Killer cells, 531
T Lymphocytes, 531
Killer cells
Bone marrow, 531
Specificity/xenogeneic reactivity, 471
Spleen cells, nude mouse, 531

**Lymphotoxins**
Transplantation, allogeneic
IgG, 465

**Lysine**
T Lymphocytes
Lymphocyte cooperation, 20

**Lysozyme**
*see* Muramidase

## M

**Macrophages**
Acetic acid, mercapto-
Antigen-antibody complex, 607
Alkaline phosphatase
Bone marrow, 919
Antigens
Hypersensitivity, delayed, 965
Bone marrow
Plasminogen activators, 231
Catalase
Pinocytosis, 938
Colony stimulating factor
Cultured cells, mouse, 231
Fibrinolysis, 231
Plasminogen activators, 231
Prostaglandins E, 277
Complement
Antigen-antibody complex, 607
Cell adhesion, 607
Phagocytosis, 607
Complement 3B
Phagocytosis, 653
Concanavalin A
Fibrinolysis, 231
Endotoxins
Macrophage activating factor, 359
Genes, immune response
Lymphocyte cooperation, 1293
Hematopoietic stem cells
Antigens, 977
Hydrogen peroxide
Antimicrobial activity, 938, 950
IgG
Immunoglobulins, Fc, 580
Immunoglobulins, Fc
Antigen-antibody complex, 607

**Macrophages (cont'd)**
Binding sites, mouse, 721
Cell adhesion, 607
Phagocytosis, 653
Indomethacin
Prostaglandins E, 277
Lactoferrin
Cell differentiation, 277
Colony stimulating factor, 277
*Leishmania enriettii*
Macrophage activating factor, 359
Lipopolysaccharides
Amyloid, 597
Immune response, mouse, 597
Lymphocytes
Concanavalin A, 359
T Lymphocytes
Antigen recognition, 709
Binding, 1143
Cell differentiation, 709
Genes, immune response, 1143
Histocompatibility antigens, 1143
Lymphocyte cooperation, 653
Lymphokines
Fibrinolysis, 231
Myeloma proteins
Binding sites, mouse, 721
Immunoglobulins, heavy chain, 721
Peritoneum
Plasminogen activators, 231
Plasminogen activators
Cultured cells, mouse, 231
Fibrinolysis, 231
Prostaglandins E
Cell differentiation, 277
Superoxide dismutase
Pinocytosis, 938
Thioglycolates
Fibrinolysis, 231
*Toxoplasma gondii*
Hydrogen peroxide, 938, 950
Hydroxides, 938, 950
Immunization, 950
Virus, influenza
Immune response, mouse, 117
Radiation chimera, 117
Xanthine oxidase
Antimicrobial activity, 938, 950
Pinocytosis, 938

**Malaria**
Immunization
Binding sites, antibody, 1241

**Mannitol**
Macrophages
Antimicrobial activity, 938

**Mannose**
T Lymphocytes
Membrane proteins, 777

**Mast cells**
Bone marrow
Cell differentiation, 482
Chediak-Higashi syndrome

**Mast cells (cont'd)**
Cell differentiation, 482
1,2-Diacylglycerol
Cell membrane, 1039
Metabolism, 1039
T Lymphocytes
Cell differentiation, 482
Lymphoid tissue
Cell differentiation, 482
Transplantation
Skin, nude mouse, 482

**Mastocytoma**
*see* Sarcoma, mast cell

**Mating preference**
Histocompatibility antigens
Olfactory perception, 755
Olfactory perception
Mouse, inbred, 755

**Maze learning**
Histocompatibility antigens
Chemoreceptors, 755

**Membrane proteins**
T Lymphocytes
Antigenic determinants, 777
Mannose, 777
Virus, Semliki Forest
Antibody-dependent cell cytotoxicity, 1383
Cell fusion, 1383
Immunity, cellular, 1383
Virus, vesicular stomatitis
Liposomes, 1049

**3-Methylcholanthrene**
*see* Cholanthrene, 3-methyl-

**Methylmannosides**
Eosinophils
Concanavalin A, 1456

***Micrococcus lysodeikticus***
Anti-antibodies
Antibody specificity, 184
Synthesis, rabbit, 184
Carbohydrates
Anti-antibodies, 184

**Mitomycin C**
T Lymphocytes
Receptors, antigen, 1520

**Monocytes**
Collagen
Inhibitory factor(s), 1421
Glomerulonephritis
Antigen-antibody complex, 413
Ultrastructural study, rabbit, 413
Histocompatibility antigens
Lymphocyte cooperation, 1271
*Neisseria meningitidis*
Antibacterial activity, 127
Antibody-dependent cell cytotoxicity, 127
Osteoclasts
Bone resorption, 338
Prostaglandins E

**Monocytes (cont'd)**
Bone resorption, 338
Osteoclast-activating factor, 338

**Multiple myeloma**
IgA
Idiotypic determinants, 792
Immunoglobulins, light chain, 792
IgM
Idiotypic determinants, 792
Immunoglobulins, light chain
Idiotypic determinants, 792
B Lymphocytes
Cell differentiation, 792
T Lymphocytes, 792
T Lymphocytes
Immunoglobulins, heavy chain, 792

**Muramidase**
T Lymphocytes
Genes, immune response, 293
Immunosuppression, 293
Lymphocyte cooperation, 293
Peptides
T Lymphocytes, 293

**Mutation**
Genes, immune response
Histocompatibility antigens, 1323
Histocompatibility antigens
Antibody formation, 1323
Graft rejection, 1323
Lymphocyte cooperation, 1323

**Myeloma proteins**
Haptens
Hypersensitivity, delayed, 818
IgA
Antibody specificity, 792
Antigen-antibody complex, 1161
Immune serums
Idiotype-specific reactivities, 818
Immunoglobulins, heavy chain
Macrophages, 721
Macrophages
Binding sites, mouse, 721
Plasma cells
Idiotypic determinants, 792

N

**Necrosis**
Skin
Graft rejection, 322
Transplantation, allogeneic
Endothelium, 322
Graft rejection, 322
Ultrastructural study, 322

***Neisseria meningitidis***
Immune serums
Antibacterial activity, 127
T Lymphocytes
Antibacterial activity, 127
Antibody-dependent cell cytotoxicity, 127
Killer cells, 127

***Neisseria meningitidis* (cont'd)**
Monocytes
Antibacterial activity, 127
Antibody-dependent cell cytotoxicity, 127
Polysaccharides
Immune serums, 127

**Neuraminidase**
Virus, influenza
Cytochalasin B, 379
Virus, vesicular stomatitis
Cytochalasin B, 379

**Neutrophils**
Arachidonic acid
Cell movement, 406
Chemotaxis, 406
Eicosatetranaenoic acid, mono-hydroxy-, 406
Lipoxygenases, 406
Metabolites, 406
Leukocytes, polymorphonuclear
*Rickettsia tsutsugamushi*, 703
Lipoxygenases
Chemotaxis, 406
Prostaglandins E
Cell differentiation, 277
*Schistosoma mansoni*
Immune adherence, 1456

**Nucleic acid hybridization**
Teratoid tumor
DNA, Viral, 392

O

**Olfactory perception**
Histocompatibility antigens
Mating preference, 755
Maze learning, 755
Mating preference
Mouse, inbred, 755

**Osteoclast-activating factor**
Lymphocyte cooperation
Indomethacin, 338
Plant agglutinins, 338
Monocytes
Prostaglandins E, 338

**Ovalbumin**
Antigen-antibody reactions
Immunologic memory, 888

**Oxazolone**
Cardiac output
Tissue distribution, 218
Hyperemia
Immune response, mouse, 218
Lymph nodes, 218
Lymphocytes, 218
Inflammation

**Oxazolone (cont'd)**
Ear, 218
Lymph nodes
Blood circulation, 218
Lymphocytes
Cell movement, 218

P

**Peptides**
Muramidase
T Lymphocytes, 293

**Peritoneum**
Macrophages
Plasminogen activators, 231

**Phagocytosis**
T Lymphocytes
Lymphocyte cooperation, 653
Macrophages
Complement 3B, 653
Immunoglobulins, Fc, 653
*Rickettsia tsutsugamushi*
Ultrastructural study, BHK-21 cells, 703

**Phosphoglycerate kinase**
Fibrosarcoma
Cholanthrene, 3-methyl-, 878
X Chromosome inactivation, 878

**Phosphorylcholine**
Antibody formation
Lymphocyte cooperation, 1399
Haptens
Hypersensitivity, delayed, 818
Immunologic deficiency syndromes
B Lymphocytes, 1399
B Lymphocytes
Antibody formation, 1399

**Phytohemagglutinins**
*see* Plant agglutinins

**Picryl chloride**
Blood circulation
Lymph nodes, 218
Cardiac output
Tissue distribution, 218

**Pinocytosis**
Macrophages
Catalase, 938
Superoxide dismutase, 938
Xanthine oxidase, 938

**Plant agglutinins**
Lymphocyte cooperation
Osteoclast-activating factor, 338
T Lymphocytes
Cytotoxicity, 196
Isoantigens, 246, 1472

**Plasma cells**
Autoantibodies
Immune response, rabbit, 1265
IgG
Autoantibodies, 1265

**Plasma cells (cont'd)**
Myeloma proteins
Idiotypic determinants, 792

**Plasmacytoma**
Gangliosides
Antibody specificity, 1008
Hybrid cells
Gangliosides, 1008
IgG, 580
Immunoglobulins, Fab, 580
IgM
Hybrid cells, 698
Killer cells
Specificity/xenogeneic reactivity, 471

**Plasminogen activators**
Macrophages
Bone marrow, 231
Colony stimulating factor, 231
Cultured cells, mouse, 231
Fibrinolysis, 231
Peritoneum, 231

***Plasmodium falciparum***
Antigenic determinants
Merozoites, 1241
Erythrocytes
Binding sites, antibody, 1241
Merozoites, 1241

***Plasmodium knowlesi***
Antigen-antibody reactions
Immunogenetics, monkey, 86
Antigens
Immunogenetics, monkey, 86
Isolation and characterization, 86
Erythrocytes
Antigen-antibody reactions, 86
Immunogenetics, monkey, 86

**Platelet aggregation**
Complement
Thrombin, 633
Trypsin, 633

**Polysaccharides**
*Neisseria meningitidis*
Immune serums, 127

**Polyvinyl pyrrolidine**
B Lymphocytes
Lymphocyte cooperation, 1285

**PPD**
*see* Tuberculin

**Pregnancy**
T Lymphocytes
Antibody formation, 898
B Lymphocytes
Antibody formation, 898

**Prekallikrein**
Factor XII
Proteolysis, 1122
Hageman factor
Binding and activation, 1122
Kininogens, 1122

**Proline, 4-hydroxy-**
Collagen
Fibroblasts, 1421
Inflammatory reaction, 1421

**Prostaglandins E**
Adenosine cyclic-3′,5′-monophosphate
Lymphocytes, 1260
Granulocytes
Cell differentiation, 277
Lymphocytes
Binding sites, 1260
T Lymphocytes
Adenosine cyclic-3′,5′-monophosphate, 1260
Macrophages
Cell differentiation, 277
Colony stimulating factor, 277
Indomethacin, 277
Monocytes
Bone resorption, 338
Osteoclast-activating factor, 338
Neutrophils
Cell differentiation, 277
Osteoclasts
Bone resorption, 338

**Protamines**
Eosinophils
Binding, 1456

**Proteins**
Eosinophils
Binding, 1456

**Proteinuria**
Kidney glomerulus
Esterases, 413

**Proteolysis**
Factor XII
Kininogens, 1122
Prekallikrein, 1122

**Purified protein derivative**
*see* Tuberculin

**R**

**Radiation chimera**
Histocompatibility antigens
Genes, immune response, 1134
Immunologic deficiency syndromes
B Lymphocytes, 1285
B Lymphocytes
Adaptive differentiation, 715
Antibody formation, 715
T Lymphocytes
Histocompatibility gene complex, 715
Virus, influenza
Kupffer cells, 117
Macrophages, 117
Virus, vaccinia
Genes, immune response, 1187
T Lymphocytes, 1187

**Radiation, ionizing**
Autoimmune disease
NZB/NZW mouse, 371
Glomerulonephritis
Immune response, mouse, 371
NZB/NZW mouse, 371
B Lymphocytes
Cell adhesion, 256

**Receptors, antigen**
Lipopolysaccharides
T Lymphocytes, 1520
T Lymphocytes
Cells, cultured, 1510
Mitomycin C
T Lymphocytes, 1520

**Receptors, immunoglobulin**
IgA
Hepatocytes, rat, 1577
Secretory component, 1577

**Receptors, prostaglandin**
T Lymphocytes
IgG, 1260

**Reverse transcriptase**
Teratoid tumor
Cell differentiation, 392
Viruses, oncogenic
Teratoid tumor, 392

***Rickettsia tsutsugamushi***
Neutrophils
Leukocytes, polymorphonuclear, 703
Phagocytosis
Ultrastructural study, BHK-21 cells, 703

**S**

**Sarcoma, mast cell**
T Lymphocytes
Cytosine, 1-β-*D*-arabinofuranosyl-, 196
Cytotoxicity, 196

***Schistosoma mansoni***
Eosinophils
Immune adherence, 1456
Neutrophils
Immune adherence, 1456

**Secretory component**
*see also* Glycoproteins
IgA
Epithelial cells, intestines, 1538
Hepatocytes, rat, 1538
Receptors, immunoglobulin, 1577

**Serum albumin**
Antigen-antibody complex
Kidney glomerulus, 1410
Glomerulonephritis
Antigen-antibody complex, 413
IgG
Autoantibodies, 1265
Immunization
Autoantibodies, 1265

**Serum proteins**
*see* Blood proteins

**Sialic acid**
Complement 3
Cell membrane, 1202

**Skin**
Necrosis
Graft rejection, 322

**Spleen**
Culture media
Suppressor cells, 1359
T Lymphocytes
Suppressor cells, 1359

***Staphylococcus aureus***
Histocompatibility antigens
Peptide mapping, 100
Isoantigens
Peptide mapping, 100

**Stem cells**
*see* Hematopoietic stem cells

***Streptococcus* group A**
*see* *Streptococcus pyogenes*

***Streptococcus pyogenes***
Cyanogen bromide
Vaccines, 862
Lipases
Cell membrane, 1498
Lipoteichoic acid
Enzymatic deacylation, 1498
Vaccines
Antibody specificity, 862
Hypersensitivity, delayed, 862

**Superoxide dismutase**
Macrophages
Pinocytosis, 938

**Suppressor cells**
T Lymphocytes
Cytotoxicity, 1359
Liver, 1359
Lymphocyte culture test, mixed, 1359
Spleen, 1359

**T**

**Teratocarcinoma**
*see* Teratoid tumor

**Teratoid tumor**
DNA, viral
Nucleic acid hybridization, 392
Reverse transcriptase
Cell differentiation, 392
Virus, AKR murine leukemia
Virus replication, 392
Virus, Moloney murine leukemia
Virus replication, 392

**Teratoid tumor (cont'd)**
Viruses, oncogenic
Cell differentiation, 392
Hematopoietic stem cells, 392
Isolation and characterization, 392
Reverse transcriptase, 392
Viral proteins, 392
Virus replication, 392

**Testosterone**
Histocompatibility antigens
Immune serums, 1020

**Tetanus toxoid**
T Lymphocytes
Isoantigens, 246, 1472

**Thioglycolate**
*see* Acetic acid, mercapto-

**Thioglycolates**
Macrophages
Fibrinolysis, 231

**Thrombin**
Complement
Platelet aggregation, 633

**Thymus gland**
Transplantation, homologous
Immune tolerance, 1351

***Toxoplasma gondii***
Macrophages
Hydrogen peroxide, 938, 950
Immunization, 950

**Transplantation, allogeneic**
Endothelium
Microvascular injury, 322
Necrosis, 322
Histocompatibility antigens
Immunity, cellular, 465
IgG
Lymphotoxins, 465
Immunity, cellular
Graft rejection, 322
Immunity, passive
Kidney, 465
Kidney
Immunity, cellular, 455, 465
Immunogeneic passenger cells, 465
T Lymphocytes
Immunity, cellular, 465
Necrosis
Graft rejection, 322
Ultrastructural study, 322

**Transplantation, autologous**
Endothelium
Ultrastructural study, 322

**Transplantation, heterologous**
Fibrosarcoma
Virus, murine sarcoma, 1195

**Transplantation, homologous**
Immune tolerance

**Transplantation, homologous (cont'd)**
Mouse, nude, 1351
Thymus gland
Immune tolerance, 1351

**2,4,6-Trinitrophenyl-lys-Ficoll**
Autoantibodies
Antibody formation, 154
Spleen, mouse, 138
2,4-Dinitrophenyl-ε-amino-*n*-caproic acid
Plaque assay, 138
Haptens
Antibody formation, 154
2,4,6-Trinitrophenyl-ε-amino-*n*-caproic acid
Antibody formation, 154
2,4-Dinitrophenyl-ε-amino-*n*-caproic acid, 138
Plaque assay, 138
Spleen, mouse, 154

**Trypsin**
Complement
Platelet aggregation, 633

**Tuberculin**
Cell cycle
Lymphocyte transformation, 1339
Immunoglobulins, surface
IgM, 1339
B Lymphocytes
IgG, 1339
Immunoglobulins, surface, 1339
Lymphocyte transformation, 1339
T Lymphocytes
Immune response, 1271
Isoantigens, 246

**Tumor necrosis serum**
Killer cells
Induction and activation, spleen, mouse, 426
Leukemia, radiation-induced
Killer cells, 426

**Tyrosine**
T Lymphocytes
Lymphocyte cooperation, 20

V

**Vaccines**
*Streptococcus* group A
Antibody specificity, 862
Cyanogen bromide, 862
Hypersensitivity, delayed, 862
Opsonins, 862
Protein M, 862

**Viral proteins**
Cytochalasin B
Glycosylation, 379
Virus, Friend murine leukemia
Antibody formation, 10
Antigens, viral, 10
Viruses, oncogenic
Teratoid tumor, 392

**Virus activation**
Virus, Moloney murine leukemia

**Virus activation (cont'd)**
T Lymphocytes, 1367
Virus, Moloney murine sarcoma
T Lymphocytes, 1367

**Virus, AKR murine leukemia**
Antigens, viral
Killer cells, 51
Histocompatibility antigens
Immunity, cellular, 51
Immunity, cellular
Antigenic determinants, 51
Leukemia
Immunity, cellular, 51
T Lymphocytes
Immunity, cellular, 51
Killer cells, 51
Teratoid tumor
Virus replication, 392

**Virus, Bebaru**
Antigen-antibody complex
Cytotoxicity, 166
Histocompatibility antigens
Antigen-antibody complex, 166
Cytotoxicity, 166
T Lymphocytes
Histocompatibility antigens, 166

**Virus, ectromelia**
T Lymphocytes
Histocompatibility antigens, 166

**Virus, Epstein-Barr**
Histocompatibility antigens
Immunity, cellular, 1310
T Lymphocytes
Anti-antibodies, 1310
Histocompatibility antigens, 1310

**Virus, Friend murine leukemia**
Antibody formation
Genes, immune response, 10
Viral proteins, 10
Viremia, 10
Antigens, neoplasm
Killer cells, 1174
Genes, immune response
Immunity, cellular, 10
Histocompatibility antigens
Immunity, cellular, 1174
Viral proteins
Antigens, viral, 10

**Virus, Gross murine leukemia**
Antigens, neoplasm
Killer cells, 1174
Antigens, viral
Killer cells, 51
Histocompatibility antigens
Immunity, cellular, 51, 1174
Immunity, cellular
Antigenic determinants, 51
Leukemia
Immunity, cellular, 51
T Lymphocytes
Immunity, cellular, 51

**Virus, Gross murine leukemia (cont'd)**
Killer cells, 51
Leukocyte culture test, mixed, 1174

**Virus, influenza**
Antigen-antibody complex
Cytotoxicity, 166
Cytochalasin B
Actin, 379
Glycoproteins, 379
Neuraminidase, 379
Virus replication, 379
Genetics
Immune response, mouse, 117
Histocompatibility antigens
Antigen-antibody complex, 166
Cytotoxicity, 166
Immunity, cellular
Lymphocyte cooperation, 1277
Kupffer cells
Radiation chimera, 117
T Lymphocytes
Cytotoxicity, 1277
Histocompatibility antigens, 166
Macrophages
Immune response, mouse, 117
Radiation chimera, 117

**Virus, measles**
Blood proteins
Membrane attack mechanism, 445
IgG
Immunoglobulins, Fab, 445

**Virus, Moloney murine leukemia**
Antigenic determinants
Immunity, cellular, 1367
T Lymphocytes
Immunity, cellular, 1367
Virus activation, 1367
Teratoid tumor
Virus replication, 392

**Virus, Moloney murine sarcoma**
Antigenic determinants
Immunity, cellular, 1367
T Lymphocytes
Virus activation, 1367

**VIrus, murine cytomegalo**
Immunity, cellular
T Lymphocytes, 1549
Killer cells
Interferon, 1549
T Lymphocytes
Cytotoxicity, 1549

**Virus, murine leukemia**
Carcinoma, epidermoid
Cholanthrene, 3-methyl-, 1567
Fibrosarcoma
Cholanthrene, 3-methyl-, 1567

**Virus, murine sarcoma**
Fibrosarcoma
Transplantation, heterologous, 1195
Virus, recombinant

**Virus, murine sarcoma (cont'd)**
Muntjac diploid cells, 1195
Tumorigenicity, nude mouse, 1195

**Virus, Rauscher murine leukemia**
Antigens, neoplasm
Killer cells, 1174
Histocompatibility antigens
Immunity, cellular, 1174

**Virus, recombinant**
Virus, murine sarcoma
Muntjac diploid cells, 1195
Tumorigenicity, nude mouse, 1195

**Virus replication**
Virus, AKR murine leukemia
Teratoid tumor, 392
Virus, influenza
Cytochalasin B, 379
Virus, Moloney murine leukemia
Teratoid tumor, 392
Virus, vesicular stomatitis
Cytochalasin B, 379
Viruses, oncogenic
Teratoid tumor, 392

**Virus, Semliki Forest**
Membrane proteins
Antibody-dependent cell cytotoxicity, 1383
Cell fusion, 1383
Immunity, cellular, 1383

**Virus, Sendai**
Immunity, cellular
Lymphocyte cooperation, 1277
T Lymphocytes
Cytotoxicity, 1277

**Virus, tobacco mosaic**
Anti-antibodies
Antibody specificity, 184
Synthesis, rabbit, 184

**Virus, vaccinia**
T Lymphocytes
Histocompatibility antigens, 1187
Histocompatibility gene complex, 693
Thymus-reconstituted nude mouse, 693
Radiation chimera
Genes, immune response, 1187
T Lymphocytes, 1187

**Virus, vesicular stomatitis**
Cytochalasin B
Glycoproteins, 379
Neuraminidase, 379
Virus replication, 379
Liposomes
Antigens, viral, 1049
Membrane proteins, 1049
T Lymphocytes
Liposomes, 1049

**Viruses, oncogenic**
Teratoid tumor
Cell differentiation, 392
Hematopoietic stem cells, 392

**Viruses, oncogenic (cont'd)**
Isolation and characterization, 392
Reverse transcriptase, 392
Viral proteins, 392
Virus replication, 392

X

**Xanthine oxidase**
Macrophages
Pinocytosis, 938

Z

**Zymosan**
Complement 3
Complement pathway, alternative, 1202

Statement of Ownership, Management, and Circulation required by Act of 12 August 1970; Section 3685, Title 39, United States Code: *The Journal of Experimental Medicine*. Published monthly by The Rockefeller University Press at 1230 York Avenue, New York 10021. Editors: Zanvil A. Cohn, James G. Hirsch, Henry G. Kunkel, Maclyn McCarty, The Rockefeller University, New York 10021. Owned by The Rockefeller University, New York 10021, nonprofit corporation, authorized to mail at special rates. Purpose, function, and nonprofit status of the organization and the exempt status for Federal income tax purposes have not changed during the preceding 12 months. The following statistics represent the average number of copies for each issue during the preceding 12 months: copies printed for each issue, 4309; sales through dealers, street vendors, counter sales, 0; mail subscriptions, 3482; total paid circulation, 3482; free subscriptions, 70; office use, left-over, unaccounted for, spoiled, 757; net press run, 4309. The following statistics represent the actual number of copies of the single issue published nearest to date of filing: copies printed, 4700; sales through dealers, street vendors, counter sales, 0; mail subscriptions, 3849; total paid circulation, 3849; free subscriptions, 76; office use, left-over, unaccounted for, spoiled, 775; net press run, 4700. Single issue nearest filing date, October 1979.

# THE ROCKEFELLER UNIVERSITY PRESS JOURNALS · 1980

## BIOPHYSICAL JOURNAL volumes 29-32

The official journal of the Biophysical Society, and edited in cooperation with the Division of Biological Physics of The American Physical Society. Monthly: 4 volumes a year, 3 issues each. Subscription $150 (Europe $164); single issue $12.50

## THE JOURNAL OF CELL BIOLOGY volumes 84-87

The official journal of The American Society for Cell Biology. Monthly: 4 volumes a year, 3 issues each. Subscription $160 (Europe $182); single issue $13.50

## THE JOURNAL OF EXPERIMENTAL MEDICINE volumes 151-152

Monthly: 2 volumes a year, 6 issues each. Subscription $85 (Europe $101); single issue $7.25

## THE JOURNAL OF GENERAL PHYSIOLOGY volumes 75-76

The official journal of the Society of General Physiologists. Monthly: 2 volumes a year, 6 issues each. Subscription $80 (Europe $94); single issue $6.75

## THE JOURNAL OF CLINICAL INVESTIGATION volumes 65-66

Official journal of The American Society for Clinical Investigation. Monthly: 2 volumes a year, 6 issues each. Subscription $75 (Europe $91); single issue $6.50

BACK ISSUES available. Write to Order Service, The Rockefeller University Press, New York 10021, for information.

DISCOUNTS: Special discount through Society-placed subscriptions; write to Order Service for special discount form for students, interns, and residents; 10% discount to agents for subscriptions and orders for complete back volumes.

MICROFICHE and MICROFILM subscriptions and back copies available for all journals; inquire of Order Service about prices.

***Order from your Agent or Bookseller or The Order Service of The Rockefeller University Press. Subscriptions entered upon receipt of payment.***

Please enter my subscription for: _____
JOURNAL NAME

For volume(s) _____

NAME _____
PLEASE PRINT

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Order from The Rockefeller University Press
Post Office Box 5108, Church Street Station, New York, N.Y. 10249

# Biophysical Discussions

SECOND DISCUSSION—MAY 1980

## Proteins and Nucleoproteins: Structure, Dynamics, and Assembly

The Biophysical Society will hold its second Biophysical Discussion at Airlie House, Airlie, Virginia (near Washington, D. C.) on May 18–21, 1980.

This Discussion will consider recent advances in understanding the principles of macromolecular structure, dynamics, and assembly of proteins and nucleoproteins. Sessions will be devoted to:

Elucidation of structure by diffraction and spectroscopic methods

Nature of forces stabilizing macromolecular structure

Fluctuations in macromolecular structures

Mechanisms of folding and assembly

Experimental systems to be discussed include proteins, viruses, and organelles involving protein-nucleic acid interactions.

One month prior to the meeting, all participants will receive a study book containing the full texts of Discussion papers and 1000-word abstracts of the Discussion Posters. There will be no formal presentation of Discussion papers at the meeting, only five-minute reminders by the author(s) followed by open discussion. Participants may contribute short, formal, written comments of their own to be distributed at the meeting. Edited transcripts of each session's discussion will be added to the final record of the proceedings, to be published as the October issue of the *Biophysical Journal*.

For further information contact Valerie Parsegian, Executive Secretary, Biophysical Discussions, Box 30239, Bethesda, Maryland 20014. Phone 202-362-8184. The deadline for receiving completed applications for participating in the second Biophysical Discussion is March 1, 1980.

# MICROFILM AND MICROFICHE

- Produced from highest quality silver halide masters in accordance with specifications recommended by the National Bureau of Standards
- Clear resolution with controlled density and good contrast
- Reproduction cover-to-cover: all articles, announcements, abstracts, supplements, volume and cumulative indexes
- Prompt service; price includes prepaid postage

**MICROFICHE**

- Subscriptions: monthly, simultaneous with paper edition
- Bibliographic color header includes: journal, volume, number, month, year, inclusive pages, fiche-set no., reduction ratio
- 98 frames per fiche
- National Bureau of Standards test target on each fiche
- Reduction ratio 24:1
- High fidelity micrograph production (positive image, JCB)

**MICROFILM**

- Subscriptions: annual, spring of year following
- Blip-coded for automatic page search and retrieval
- Format options: 16 mm/35 mm; positive/negative; cartridge/reel
- Reduction ratio 22:1

## MICROFORM ORDER SUBSCRIPTIONS

| For microfilm fill out format below* → | MICROFILM* publication spring of year following | | MICROFICHE publication simultaneous with paper copy | | TOTAL AMOUNT |
|---|---|---|---|---|---|
| | 1978 | 1979 | 1979 | 1980 | |
| Biophysical Journal | ☐ $25 | ☐ $25 | ☐ $ 80 | ☐ $150 | $_____ |
| Journal of Cell Biology | ☐ 50 | ☐ 50 | ☐ 125 | ☐ 160 | _____ |
| Journal of Clinical Investigation | ☐ 50 | ☐ 50 | ☐ 75 | ☐ 75 | _____ |
| Journal of Experimental Medicine | ☐ 50 | ☐ 50 | ☐ 85 | ☐ 85 | _____ |
| Journal of General Physiology | ☐ 25 | ☐ 25 | ☐ 60 | ☐ 80 | _____ |
| | | | Subscription total | | $_____ |

* **SPECIFY MICROFILM FORMAT** Check 1 box in each column

Size { 16 mm ☐ / 35 mm ☐ } Film { Positive ☐ / Negative ☐ } Cartridge { 3M ☐ / Kodak ☐ } Open Reel ..... ☐

Back copies, from Vol. 1 on, are available at special rates. Inquire at address below.

NAME_____

ADDRESS_____ ☐ Bill me

_____ ZIP_____ ☐ Payment enclosed

*Make checks payable in U.S. currency to The Rockefeller University Press and mail to Box 5108, N.Y., N.Y. 10249*

# THE JOURNAL
## OF
# EXPERIMENTAL MEDICINE


EDITED BY

ZANVIL A. COHN — HENRY G. KUNKEL

JAMES G. HIRSCH — MACLYN McCARTY

ASSISTANT EDITORS

SHU MAN FU — ALLAN R. GOLDBERG

RALPH STEINMAN

ADVISORY EDITORS

K. FRANK AUSTEN
ALEXANDER G. BEARN
BARUJ BENACERRAF
DOROTHEA BENNETT
RUPERT E. BILLINGHAM
BARRY R. BLOOM
FRANK J. DIXON
MARILYN G. FARQUHAR
HIDESABURO HANAFUSA
ATTALLAH KAPPAS
THOMAS J. KINDT
RICHARD M. KRAUSE
FRANK LILLY
GEORGE B. MACKANESS
HUGH O. McDEVITT
HANS J. MÜLLER-EBERHARD
RALPH L. NACHMAN
ROBERT J. NORTH
WILLIAM E. PAUL
BENVENUTO PERNIS
EDWARD REICH
MATTHEW D. SCHARFF
JONATHAN SPRENT
IGOR TAMM
JONATHAN W. UHR
KENNETH S. WARREN
WILLIAM O. WEIGLE
DARCY B. WILSON
HENRY J. WINN

VOLUME 150

1979

PUBLISHED MONTHLY BY

THE ROCKEFELLER UNIVERSITY PRESS

COPYRIGHT © 1979 BY THE ROCKEFELLER UNIVERSITY PRESS

# CONTENTS

## Volume 150 No. 1 July 1, 1979


1 EARL L. PARR. The absence of H-2 antigens from mouse pancreatic. $\beta$-cells demonstrated by immunoferritin labeling

10 DON DOIG and BRUCE CHESEBRO. Anti-Friend virus antibody is associated with recovery from viremia and loss of viral leukemia cell-surface antigens in leukemic mice. Identification of Rfv-3 as a gene locus influencing antibody production

20 DAVID H. KATZ, LEE R. KATZ, CHERYL A. BOGOWITZ, and PAUL H. MAURER. Adaptive differentiation of murine lymphocytes. IV. (responder × nonresponder) $F_1$ T cells can be taught to preferentially help nonresponder, rather than responder, B cells

31 JOEL D. TAUROG, HARALAMPOS M. MOUTSOPOULOS, YVONNE J. ROSENBERG, THOMAS M. CHUSED, and ALFRED D. STEINBERG. CBA/N X-linked B-cell defect prevents NZB B-cell hyperactivity in $F_1$ mice

44 D. D. EARDLEY, F. W. SHEN, H. CANTOR, and R. K. GERSHON. Genetic control of immunoregulatory circuits. Genes linked to the Ig locus govern communication between regulatory T-cell sets

51 WILLIAM R. GREEN, ROBERT C. NOWINSKI, and CHRISTOPHER S. HENNEY. The generation and specificity of cytotoxic T cells raised against syngeneic tumor cells bearing AKR/Gross murine leukemia virus antigens

67 JOHN CLIFFORD BROWN and L. SCOTT RODKEY. Autoregulation of an antibody response via network-induced auto-anti-idiotype

86 RUPERT SCHMIDT-ULLRICH, DONALD F. H. WALLACH, and JOHN LIGHTHOLDER. Two *Plasmodium knowlesi*-specific antigens on the surface of schizont-infected Rhesus monkey erythrocytes induce antibody production in immune hosts

100 TERRY L. DELOVITCH and BRIAN H. BARBER. Evidence for two homologous, but nonidentical, Ia molecules determined by the *I-EC* subregion

108 GÜNTER J. HÄMMERLING, ULRICH HÄMMERLING, and LORRAINE FLAHERTY. Qat-4 and Qat-5, new murine T-cell antigens governed by the *Tla* region and identified by monoclonal antibodies

117 OTTO HALLER, HEINZ ARNHEITER, and JEAN LINDENMANN. Natural, genetically determined resistance toward influenza virus in hemopoietic mouse chimeras. Role of mononuclear phagocytes

127 GEORGE H. LOWELL, LYNETTE F. SMITH, MALCOLM S. ARTENSTEIN, GEOFFREY S. NASH, and RICHARD P. MACDERMOTT, JR. Antibody-dependent cell-mediated antibacterial activity of human mononuclear cells. I. K lymphocytes and monocytes are effective against meningococci in cooperation with human immune sera

138 A. FAYE SCHRATER, EDMOND A. GOIDL, G. JEANETTE THORBECKE, and GREGORY W. SISKIND. Production of auto-anti-idiotypic antibody during the normal immune response to TNP-Ficoll. I. Occurrence in AKR/J and BALB/c mice of hapten-augmentable, anti-TNP plaque-forming cells and their accelerated appearance in recipients of immune spleen cells

154 EDMOND A. GOIDL, A. FAYE SCHRATER, GREGORY W. SISKIND, and G. JEANETTE THORBECKE. Production of auto-anti-idiotypic antibody during the normal immune response to TNP-Ficoll. II. Hapten-reversible inhibition of anti-TNP plaque-forming cells by immune serum as an assay for auto-anti-idiotypic antibody

166 ROBERT V. BLANDEN, ARNO MÜLLBACHER, and ROBERT B. ASHMAN. Different *D* end-dependent antigenic determinants are recognized by H-2-restricted cytotoxic T cells specific for influenza and bebaru viruses

174 SAMUEL J. BLACK and LEONORE A. HERZENBERG. B-cell influences on the induction of allotype suppressor T cells

184 M. WIKLER, J-D. FRANSSEN, C. COLLIGNON, O. LEO, B. MARIAMÉ, P. VAN DE WALLE, D. DE GROOTE, and J. URBAIN. Idiotypic regulation of the immune system. Common idiotypic specificities between idiotypes and antibodies raised against anti-idiotypic antibodies in rabbits

BRIEF DEFINITIVE REPORT

196 H. ROBSON MACDONALD and ROSEMARY K. LEES. Primary generation of cytolytic T lymphocytes in the absence of DNA synthesis

## Volume 150 No. 2 August 1, 1979

205 JUDY M. TEALE, JUDITH E. LAYTON, AND G. J. V. NOSSAL. In vito model for natural tolerance to self-antigens. Inhibition of the development surface-immunoglobulin-negative lymphocytes into T-dependent responsive B cells by antigen

218 C. A. OTTAWAY AND DELPHINE M. V. PARROTT. Regional blood flow and its relationship to lymphocyte and lymphoblast traffic during a primary immune reaction

231 HSIU-SAN LIN AND SAIMON GORDON. Secretion of plasminogen activator by bone marrow-derived mononuclear phagocytes and its enhancement by colony-stimulating factor

246 HON-SUM KO, SHU MAN FU, ROBERT J. WINCHESTER, DAVID T. Y. YU, AND HENRY G. KUNKEL. Ia determinants on stimulated human T lymphocytes. Occurrence on mitogen- and antigen-activated T cells

256 EDWARD L. MORGAN AND WILLIAM O. WEIGLE. The requirement for adherent cells in the Fc fragment-induced proliferative response of murine spleen cells

267 TEIZO FUJITA AND VICTOR NUSSENZWEIG. The role of C4-binding protein and $\beta$1H in proteolysis of C4b and C3b

277 LOUIS M. PELUS, HAL E. BROXMEYER, JEFFREY I. KURLAND, AND MALCOLM A. S. MOORE. Regulation of macrophage and granulocyte proliferation. Specificities of prostaglandin E and lactoferrin

293 LUCIANO ADORINI, MICHAEL A. HARVEY, ALEXANDER MILLER, AND ELI E. SERCARZ. Fine specificity of regulatory T cells. II. Suppressor and helper T cells are induced by different regions of hen egg-white lysozyme in a genetically nonresponder mouse strain

307 BENT RUBIN, BIRGIT HERTEL-WULFF, AND ARTHUR KIMURA. Alloantigen-specific idiotype-bearing receptors on mouse T lymphocytes. I. Specificity characterization and genetic association with the heavy-chain IgG allotype

322 HAROLD F. DVORAK, MARTIN C. MIHM, JR., ANN M. DVORAK, BENJAMIN A. BARNES, ELEANOR J. MANSEAU, AND STEPHEN J. GALLI. Rejection of first-set skin allografts in man. The microvasculature is the critical target of the immune response

338 TOSHIYUKI YONEDA AND GREGORY R. MUNDY. Monocytes regulate osteoclast-activating factor production by releasing prostaglandins

351 C. L. DEWITT AND M. J. BOSMA. Radioimmune analysis of an unexpected mouse allotype

359 YOLANDE BUCHMÜLLER AND JACQUES MAUEL. Studies on the mechanisms of macrophage activation. II. Parasite destruction in macrophages activated by supernates from concanavalin A-stimulated lymphocytes

371 BRIAN L. KOTZIN AND SAMUEL STROBER. Reversal of NZB/NZW disease with total lymphoid irradiation

379 JOHANNA A. GRIFFIN AND RICHARD W. COMPANS. Effect of cytochalasin B on the maturation of enveloped viruses

392 KAY HUEBNER, NOBUO TSUCHIDA, CECELIA GREEN, AND CARLO M. CROCE. A murine teratocarcinoma stem cell line carries suppressed oncogenic virus genomes

BRIEF DEFINITIVE REPORT

406 EDWARD J. GOETZL AND FRANK F. SUN. Generation of unique mono-hydroxy-eicosatetraenoic acids from arachidonic acid by human neutrophils

## Volume 150 No. 3 September 1, 1979

413 L. G. HUNSICKER, T. P. SHEARER, S. B. PLATTNER, and D. WEISENBURGER. The role of monocytes in serum sickness nephritis

426 MYUNG CHUN, VILHO PASANEN, ULRICH HÄMMERLING, GÜNTHER F. HÄMMERLING, and MICHAEL K. HOFFMANN. Tumor necrosis serum induces a serologically distinct population of NK cells

432 NOBUKATA SHINOHARA and DAVID H. SACHS. Mouse alloantibodies capable of blocking cytotoxic T-cell function. I. Relationship between the antigen reactive with blocking antibodies and the *Lyt*-2 locus

445 J. G. PATRICK SISSONS, ROBERT D. SCHREIBER, LUC H. PERRIN, NEIL R. COOPER, HANS J. MÜLLER-EBERHARD, and MICHAEL B. A. OLDSTONE. Lysis of measles virus-infected cells by the purified cytolytic alternative complement pathway and antibody

455 J. R. BATCHELOR, K. I. WELSH, A. MAYNARD, and H. BURGOS. Failure of long surviving, passively enhanced kidney allografts to provoke T-dependent alloimmunity. I. Retransplantation of (AS × AUG)$F_1$ kidneys into secondary AS recipients

465 K. I. WELSH, J. R. BATCHELOR, A. MAYNARD, and H. BURGOS. Failure of long surviving, passively enhanced kidney allografts to provoke T-dependent alloimmunity. II. Retransplantation of (AS × AUG)$F_1$ kidneys from AS primary recipients into (AS × WF)$F_1$ secondary hosts

471 JOHN C. RODER, LARS AHRLUND-RICHTER, and MIKAEL JONDAL. Target-effector interaction in the human and murine natural killer system. Specificity and xenogeneic reactivity of the solubilized natural killer-target structure complex and its loss in a somatic cell hybrid

482 Y. KITAMURA, M. SHIMADA, S. GO, H. MATSUDA, K. HATANAKA, and M. SEKI. Distribution of mast-cell precursors in hematopoietic and lymphopoietic tissues of mice

491 JOHN M. FIDLER. The induction of hapten-specific immunological tolerance and immunity in B lymphocytes. VI. Differential tolerance susceptibility in adult spleen as a function of B-cell maturation level

507 TAKAKI ITAYA and ZOLTAN OVARY. Suppression of IgE antibody production in SJL mice. IV. Interaction of primed and unprimed T cells

517 YVONNE J. ROSENBERG AND JACQUES M. CHILLER. Ability of antigen-specific helper cells to effect a class-restricted increase in total Ig-secreting cells in spleens after immunization with the antigen

531 VINAY KUMAR, EDUARDO LUEVANO, and MICHAEL BENNETT. Hybrid resistance to EL-4 lymphoma cells. I. Characterization of natural killer cells that lyse EL-4 cells and their distinction from marrow-dependent natural killer cells

548 CHRISTOPHER J. PAIGE, PAUL W. KINCADE, MALCOLM A. S. MOORE, and GRACE LEE. The fate of fetal and adult B-cell progenitors grafted into immunodeficient CBA/N mice

564 RYUZO UEDA, HIROSHI SHIKU, MICHAEL PFREUNDSCHUH, TOSHITADA TAKAHASHI, LUCY T. C. LI, WILLET F. WHITMORE, HERBERT F. OETTGEN, and LLOYD J. OLD. Cell surface antigens of human renal cancer defined by autologous typing

580 JAY C. UNKELESS. Characterization of a monoclonal antibody directed against mouse macrophage and lymphocyte Fc receptors

597 J. D. SIPE, S. N. VOGEL, J. L. RYAN, K. P. W. J. MCADAM, and D. L. ROSENSTREICH. Detection of a mediator derived from endotoxin-stimulated macrophages that induces the acute phase serum amyloid A response in mice

607 JOSEF MICHL, MARGARET M. PIECZONKA, JAY C. UNKELESS, and SAMUEL C. SILVERSTEIN. Effects of immobilized immune complexes on Fc- and complement-receptor function in resident and thioglycollate-elicited mouse peritoneal macrophages

622 BRIAN V. JEGASOTHY and DONALD R. BATTLES. Immuno-suppressive lymphocyte factors. I. Purification of inhibitor of DNA synthesis to homogeneity

633 MARGARET J. POLLEY and RALPH L. NACHMAN. Human complement in thrombin-mediated platelet function. Uptake of the C5b-9 complex

646 STEPHEN M. HEDRICK and JAMES WATSON. Genetic control of the immune response to collagen. II. Antibody responses produced in fetal liver restored radiation chimeras and thymus reconstituted $F_1$ hybrid nude mice

653 JOHANNA A. GRIFFIN and FRANK M. GRIFFIN, JR. Augmentation of macrophage complement receptor function in vitro. I. Characterization of the cellular interactions required for the generation of a T-lymphocyte product that enhances macrophage complement receptor function

676 STEPHEN D. MILLER. Suppressor T-cell mechanisms in contact sensitivity. III. Apparent non-major histocompatibility complex restriction is a result of multiple sets of major histocompatibility complex-specific suppressor T cells induced by syngeneic 2,4-dinitrophenyl-modified lymphoid cells

BRIEF DEFINITIVE REPORTS

693 ROLF M. ZINKERNAGEL, A. ALTHAGE, and G. CALLAHAN. Thymic reconstitution of nude $F_1$ mice with one or both parental thymus grafts

698 KENNETH R. SCHROER, K. JIN KIM, BENJAMIN PRESCOTT, and PHILLIP J. BAKER. Generation of anti-type III pneumococcal polysaccharide hybridomas from mice with an X-linked B-lymphocyte defect

703 Y. RIKIHISA and S. ITO. Intracellular localization of *Rickettsia tsutsugamushi* in polymorphonuclear leukocytes

709 LANNY J. ROSENWASSER, CHARLES A. DINARELLO, and ALAN S. ROSENTHAL. Adherent-cell function in murine T-lymphocyte antigen recognition. IV. Enhancement of murine T-cell antigen recognition by human leukocytic pyrogen

715 J. SPRENT and JENNIFER BRUCE. Lymphoid function in $F_1 \rightarrow$ parent chimeras. Lack of evidence for adapative differentiation of B cells or antigen-presenting cells

721 BETTY DIAMOND, BARBARA K. BIRSHTEIN, and MATTHEW D. SCHARFF. Site of binding of mouse $IgG_{2b}$ to the Fc receptor on mouse macrophages

## Volume 150 No. 4 October 1, 1979

PEYTON ROUS CENTENNIAL

729 PEYTON ROUS. A transmissible avian neoplasm (sarcoma of the common fowl) Introductions. Charles B. Huggins and René Dubos

---

755 K. YAMAZAKI, M. YAMAGUCHI, L. BARANOSKI, J. BARD, E. A. BOYSE, AND L. THOMAS. Recognition among mice. Evidence from the use of a Y-maze differentially scented by congenic mice of different major histocompatibility types

761 JUDAH Z. WEINBERGER, RONALD N. GERMAIN, SHYR-TE JU, MARK I. GREENE, BARUJ BENACERRAF, AND MARTIN E. DORF. Hapten-specific T-cell responses to 4-hydroxy-3-nitrophenyl acetyl. II. Demonstration of idiotypic determinants on suppressor T cells

777 ELLEN ROTHENBERG AND EDWARD A. BOYSE. Synthesis and processing of molecules bearing thymus leukemia antigen

792 H. KUBAGAWA, L. B. VOGLER, J. D. CAPRA, M. E. CONRAD, A. R. LAWTON, AND M. D. COOPER. Studies on the clonal origin of multiple myeloma. Use of individually specific (idiotype) antibodies to trace the oncogenic event to its earliest point of expression in B-cell differentiation

808 A. FAYE SCHRATER, EDMOND A. GOIDL, G. JEANETTE THORBECKE, AND GREGORY W. SISKIND. Production of auto-anti-idiotypic antibody during the normal immune response to TNP-Ficoll. III. Absence in nu/nu mice: evidence for T-cell dependence of the anti-idiotypic-antibody response

818 HIROSHI YAMAMOTO, MAKOTO NONAKA, AND DAVID H. KATZ. Suppression of hapten-specific delayed-type hypersensitivity responses in mice by idiotype-specific suppressor T cells after administration of anti-idiotypic antibodies

830 ALAN M. SOLINGER, MICHIEL E. ULTEE, EMANUEL MARGOLIASH, AND RONALD H. SCHWARTZ. T-lymphocyte response to cytochrome *c*. I. Demonstration of a T-cell heteroclitic proliferative response and identification of a topographic antigenic determinant on pigeon cytochrome *c* whose immune recognition requires two complementing major histocompatibility complex-linked immune response genes

849 JAMES WATSON, STEVEN GILLIS, JOHN MARBROOK, DIANE MOCHIZUKI, AND KENDALL A. SMITH. Biochemical and biological characterization of lymphocyte regulatory molecules. I. Purification of a class of murine lymphokines

862 EDWIN H. BEACHEY, GENE H. STOLLERMAN, RUDOLPH H. JOHNSON, ITZHAK OFEK, AND ALAN L. BISNO. Human immune response to immunization with a structurally defined polypeptide fragment of streptococcal M protein

878 A. LAKSHMA REDDY AND PHILIP J. FIALKOW. Multicellular origin of fibrosarcomas in mice induced by the chemical carcinogen 3-methylcholanthrene

888 AKIO YAMADA, LOUISE T. ADLER, AND FRANK L. ADLER. A role for clonal dominance in the maintenance of allotype suppression

898 KOJI SUZUKI AND T. B. TOMASI, JR. Immune responses during pregnancy. Evidence of suppressor cells for splenic antibody response

909 YOSHITANE DOHI AND ALFRED NISONOFF. Suppression of idiotype and generation of suppressor T cells with idiotype-conjugated thymocytes

919 HANNES WESTEN AND DOROTHY F. BAINTON. Association of alkaline-phosphatase-positive reticulum cells in bone marrow with granulocytic precursors

938 HENRY W. MURRAY AND ZANVIL A. COHN. Macrophage oxygen-dependent antimicrobial activity. I. Susceptibility of *Toxoplasma gondii* to oxygen intermediates

950 HENRY W. MURRAY, CHAWANEE W. JUANGBHANICH, CARL F. NATHAN, AND ZANVIL A. COHN. Macrophage oxygen-dependent antimicrobial activity. II. The role of oxygen intermediates

965 FRANCES I. SMITH AND J. F. A. P. MILLER. Delayed-type hypersensitivity to allogeneic cells in mice. III. Sensitivity to cell surface antigens coded by the major histocompatibility complex and by other genes

977 M. V. BERRIDGE. A new class of cell surface antigens. Quantitative absorption studies defining cell-lineage-specific antigens on hemopoietic cells

987 DANIELE PRIMI, GEORGE K. LEWIS, AND JOEL W. GOODMAN. A hemolytic plaque assay for activated murine T cells

1001 JAMES FORMAN AND J. WAYNE STREILEIN. T cells recognize minor histocompatibility antigens on H-2 allogeneic cells

1008 WILLIAM W. YOUNG, JR., ELIZABETH M. S. MACDONALD, ROBERT C. NOWINSKI, AND SEN-ITIROH HAKOMORI. Production of monoclonal antibodies specific for two distinct steric portions of the glycolipid ganglio-*N*-triosylceramide (asialo $GM_2$)

1020 LORRAINE FLAHERTY, DEBRA ZIMMERMAN, AND STEPHEN S. WACHTEL. H-Y antigen. Cell surface mapping and testosterone-induced supramolecular repatterning

BRIEF DEFINITIVE REPORTS

1028 GLORIA C. KOO, CARYN L. GOLDBERG, AND FUNG-WIN SHEN. Inhibition of H-Y cell-mediated cytolysis by H-$2D^b$ antiserum

1033 STEFAN H. E. KAUFMANN, MARKUS M. SIMON, AND HELMUT HAHN. Specific Lyt 123 T cells are involved in protection against *Listeria monocytogenes* and in delayed-type hypersensitivity to listerial antigens

1039 DONALD A. KENNERLY, TIMOTHY J. SULLIVAN, PATRICIA SYLWESTER, AND CHARLES W. PARKER. Diacylglycerol metabolism in mast cells: a potential role in membrane fusion and arachidonic acid release

1045 CORRECTION

## Volume 150 No. 5 November 1, 1979

1049 JOCHEN THOENES and HARALD STEIN. Properties of an Fcγ-binding protein isolated from human leukemic B cells

1067 DENNIS LOH, ALONZO H. ROSS, ARTHUR H. HALE, DAVID BALTIMORE, and HERMAN N. EISEN. Synthetic phospholipid vesicles containing a purified viral antigen and cell membrane proteins stimulate the development of cytotoxic T lymphocytes

1075 A. VAN LEEUWEN, E. GOULMY, and J. J. VAN ROOD. Major histocompatibility complex-restricted antibody reactivity mainly, but not exclusively, directed against cells from male donors

1084 HANS BINZ, HANNES FRISCHKNECHT, CLAUDIA MERCOLLI, STEPHAN DUNST, and HANS WIGZELL. Binding of purified, soluble major histocompatibility complex polypeptide chains onto isolated T-cell receptors. I. Reactivity against allo- and self-determinants

1098 V. M. MONNIER, V. J. STEVENS, and A. CERAMI. Nonenzymatic glycosylation, sulfhydryl oxidation, and aggregation of lens proteins in experimental sugar cataracts

1104 SUSAN SOLLIDAY RICH and CHELLA S. DAVID. Regulatory mechanisms in cell-mediated immune responses. VIII. Differential expression of I-region determinants by suppressor cells and their targets in suppression of mixed leukocyte reactions

1122 ROGER C. WIGGINS and CHARLES C. COCHRANE. The autoactivation of rabbit Hageman factor

1134 HARALD VON BOEHMER and WERNER HAAS. Distinct Ir genes for helper and killer cells in the cytotoxic response to H-Y antigen

1143 KIRK ZIEGLER and EMIL R. UNANUE. The specific binding of *Listeria monocytogenes*-immune T lymphocytes to macrophages. I. Quantitation and role of H-2 gene products

1161 ABDALLA RIFAI, PARKER A. SMALL, JR., PERRY O. TEAGUE, and ELIA M. AYOUB. Experimental IgA nephropathy

1174 FERNANDO PLATA and FRANK LILLY. Viral specificity of *H-2*-restricted T killer cells directed against syngeneic tumors induced by Gross, Friend, or Rauscher leukemia virus

1187 PETER C. DOHERTY and JACK R. BENNINK. Patterns of virus-immune T-cell responsiveness. Comparison of $(H\text{-}2^k \times H\text{-}2^b) \rightarrow H\text{-}2^b$ radiation chimeras and negatively selected $H\text{-}2^b$ lymphocytes

1195 MASAKAZU HATANAKA and RICHARD KLEIN. Tumorigenicity of Indian muntjac diploid cells by the proviral integration of sarcoma gene of a mouse retrovirus

1202 MICHEL D. KAZATCHKINE, DOUGLAS T. FEARON, JEREMIAH E. SILBERT, and K. FRANK AUSTEN. Surface-associated heparin inhibits zymosan-induced activation of the human alternative complement pathway by augmenting the regulatory action of the control proteins on particle-bound C3b

1216 MAN-SUN SY, BRUCE ALLEN BACH, YOSHITANE DOHI, ALFRED NISONOFF, BARUJ BENACERRAF, and MARK IRWIN GREENE. Antigen- and receptor-driven regulatory mechanisms. I. Induction of suppressor T cells with anti-idiotypic antibodies

1229 MAN-SUN SY, BRUCE ALLEN BACH, ALAN BROWN, ALFRED NISONOFF, BARUJ BENACERRAF, and MARK IRWIN GREENE. Antigen- and receptor-driven regulatory mechanisms. II. Induction of suppressor T cells with idiotype-coupled syngeneic spleen cells

1241 SUSAN G. LANGRETH and ROBERT T. REESE. Antigenicity of the infected-erythrocyte and merozoite surfaces in *Falciparum* malaria

BRIEF DEFINITIVE REPORTS

1255 JUDAH Z. WEINBERGER, BARUJ BENACERRAF, and MARTIN E. DORF. Ir gene controlled carrier effects in the induction and elicitation of hapten-specific delayed-type hypersensitivity responses

1260 JAMES S. GOODWIN, PAWEL A. KASZUBOWSKI, and RALPH C. WILLIAMS, JR. Cyclic adenosine monophosphate response to prostaglandin $E_2$ on subpopulations of human lymphocytes

1265 SUSAN JACKSON and JIRI MESTECKY. Presence of plasma cells binding autologous antibody during an immune response

1271 H. HIRSCHBERG, O. J. BERGH, and E. THORSBY. Clonal distribution of HLA-restricted antigen-reactive T cells in man

1277 R. B. ASHMAN and A. MÜLLBACHER. A T helper cell for anti-viral cytotoxic T-cell responses

## Volume 150 No. 6 December 1, 1979

1285 TULLIA LINDSTEN and BIRGER ANDERSSON. Ontogeny of B cells in CBA/N mice. Evidence for a stage of responsiveness to thymus-independent antigens during development

1293 JAMES E. SWIERKOSZ, PHILIPPA MARRACK, and JOHN W. KAPPLER. Functional analysis of T cells expressing Ia antigens. I. Demonstration of helper T-cell heterogeneity

1310 MARC LIPINSKI, WOLF H. FRIDMAN, THOMAS TURSZ, CLAUDE VINCENT, DONALD PIOUS, and MARC FELLOUS. Absence of allogeneic restriction in human T-cell-mediated cytotoxicity to Epstein-Barr virus-infected target cells. Demonstration of an HLA-linked control at the effector level

1323 I. F. C. MCKENZIE, G. M. MORGAN, M. S. SANDRIN, M. M. MICHAELIDES, R. W. MELVOLD, and H. I. KOHN. B6.C-$H\text{-}2^{bm12}$. A new *H-2* mutation in the *I* region in the mouse

1339 JAN ANDERSSON, WALDEMAR LERNHARDT, and FRITZ MELCHERS. The purified protein derivative of tuberculin, a B-cell mitogen that distinguishes in its action resting, small B cells from activated B-cell blasts

1351 HUGO O. BESEDOVSKY, ADRIANA DEL REY, and ERNST SORKIN. Role of prethymic cells in acquisition of self-tolerance

1359 FLORENCE M. ROLLWAGEN and OSIAS STUTMAN. Ontogeny of culture-generated suppressor cells

1367 TADAYOSHI TANIYAMA and HOWARD T. HOLDEN. In vitro induction of T-lymphocyte-mediated cytotoxicity by infectious murine type C oncornaviruses

1383 BROR MOREIN, DOROTHEE BARZ, ULRICH KOSZINOWSKI, and VOLKER SCHIRRMACHER. Integration of a virus membrane protein into the lipid bilayer of target cells as a prerequisite for immune cytolysis. Specific cytolysis after virosome-target cell fusion

1399 K. BOTTOMLY and D. E. MOSIER. Mice whose B cells cannot produce the T15 idiotype also lack an antigen-specific helper T cell required for T15 expression

1410 ATUL K. BHAN, ALFRED B. COLLINS, EVELINE E. SCHNEEBERGER, and ROBERT T. MCCLUSKEY. A cell-mediated reaction against glomerular-bound immune complexes

1421 SERGIO A. JIMENEZ, WILLIAM MCARTHUR, and JOEL ROSENBLOOM. Inhibition of collagen synthesis by mononuclear cell supernates

1432 JOHN W. MOORHEAD. Soluble factors in tolerance and contact sensitivity to 2,4-dinitrofluorobenzene in mice. III. Histocompatibility antigens associated with the hapten dinitrophenol serve as target molecules on 2,4-dinitrofluorobenzene-immune T cells for soluble suppressor factor

1448 CHARLES E. MOODY, BARBARA A. CASAZZA, WILLIAM N. CHRISTENSON, and MARC E. WEKSLER. Lymphocyte transformation induced by autologous cells. VIII. Impaired autologous mixed lymphocyte reactivity in patients with acute infectious mononucleosis

1456 ANTHONY E. BUTTERWORTH, MATHEW A. VADAS, DONALD L. WASSOM, ALAIN DESSEIN, MAUREEN HOGAN, BARBARA SHERRY, GERALD J. GLEICH, and JOHN R. DAVID. Interactions between human eosinophils and schistosomula of *Schistosoma mansoni*. II. The mechanism of irreversible eosinophil adherence

1472 E. L. REINHERZ, P. C. KUNG, J. M. PESANDO, J. RITZ, G. GOLDSTEIN, and S. F. SCHLOSSMAN. Ia determinants on human T-cell subsets defined by monoclonal antibody. Activation stimuli required for expression

1483 CHERYL A. WHITLOCK and JAMES D. WATSON. B-cell differentiation in the CBA/N mouse. I. Slower maturation of mitogen and antigen-responsive B cells in mice expressing an X-linked defect

1498 ROBERT E. KESSLER, IVO VAN DE RIJN, and MACLYN MCCARTY. Characterization and localization of the enzymatic deacylation of lipoteichoic acid in group A streptococci

1510 JAMES WATSON. Continuous proliferation of murine antigen-specific helper T lymphocytes in culture

1520 ZOLTAN A. NAGY and BRUCE E. ELLIOTT. The receptor specificity of alloreactive T cells. Distinction between stimulator K, I, and D region products and degeneracy of third-party H-2 recognition by low-affinity T cells

1538 DAVID J. SOCKEN, KHURSHEED N. JEEJEEBHOY, HERVE BAZIN, and BRIAN J. UNDERDOWN. Identification of secretory component as an IgA receptor on rat hepatocytes

BRIEF DEFINITIVE REPORTS

1549 GERALD V. QUINNAN and JODY E. MANISCHEWITZ. The role of natural killer cells and antibody-dependent cell-mediated cytotoxicity during murine cytomegalovirus infection

1555 ROBERT R. RICH, DEBORAH A. SEDBERRY, DANIEL L. KASTNER, and LILY CHU. Primary in vitro cytotoxic responses of NZB spleen cells to *Qa-1*$^b$-associated antigenic determinants

1561 YVONNE J. ROSENBERG. Influence of the sex-linked defect in CBA/N mice on autoimmune responses to isologous erythrocytes. Ability to overcome the defect with age

1567 PETER EBENSTEIN, BARBARA KINDER, DAVID O. BANKOLE, FRANK F. RICHARDS, and MARTINE Y. K. ARMSTRONG. Expression of endogenous xenotropic retrovirus by methylcholanthrene-induced squamous cell carcinoma of the mouse respiratory tract

1571 TIBOR DIAMANTSTEIN, EVELYNE WILLINGER, and JÖRG REIMAN. T-suppressor cells sensitive to cyclophosphamide and to its in vitro active derivative 4-hydroperoxycyclophosphamide control the mitogenic response of murine splenic B cells to dextran sulfate. A direct proof for different sensitivities of lymphocyte subsets to cyclophosphamide

1577 EVA ORLANS, JANE PEPPARD, JEFFREY F. FRY, RICHARD H. HINTON, and BARBARA M. MULLOCK. Secretory component as the receptor for polymeric IgA on rat hepatocytes

1583 Index to Volume 150